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FLIGHT MAGAZINE

FEBRUARY 1961
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NEW BEECH BARON SPEED-TWIN

(See page 18)

The new ARC Starflite Emblem on the COM/NAV equipment you select is your assurance of the ultimate in reliability.

The ARC Starflite I line of equipment is specifically designed for remote control operation in heavier multi-engine aircraft. ARC's Starflite II local-control line embraces the complete com/nav needs of the majority of commercial and private airplanes. The ARC Starflite III line of local-control equipment has been developed for service in lighter aircraft to fulfill the need for compatibly priced high-quality equipment.

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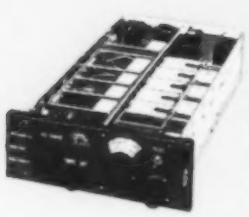

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318A ADF SYSTEM

Certified to TSO, the 318A is the only panel-mounted ADF System with a mechanically compensated loop providing 14 compensation steps for directional errors up to 25° with no loss in sensitivity. For all classes of aircraft, it has its own single or dual shock mounting.

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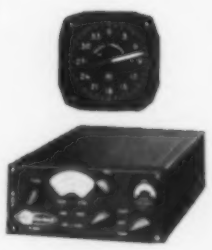
TYPE 317A COM/NAV SYSTEM • R-339A GLIDE SLOPE RECEIVER



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For the advantages and complete specifications of the ARC Starflite systems and equipment mentioned above, write to Aircraft Radio Corporation, Boonton, New Jersey. Illustrated brochures will be sent to you by return mail.

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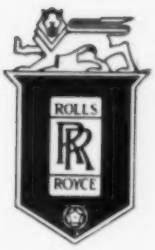

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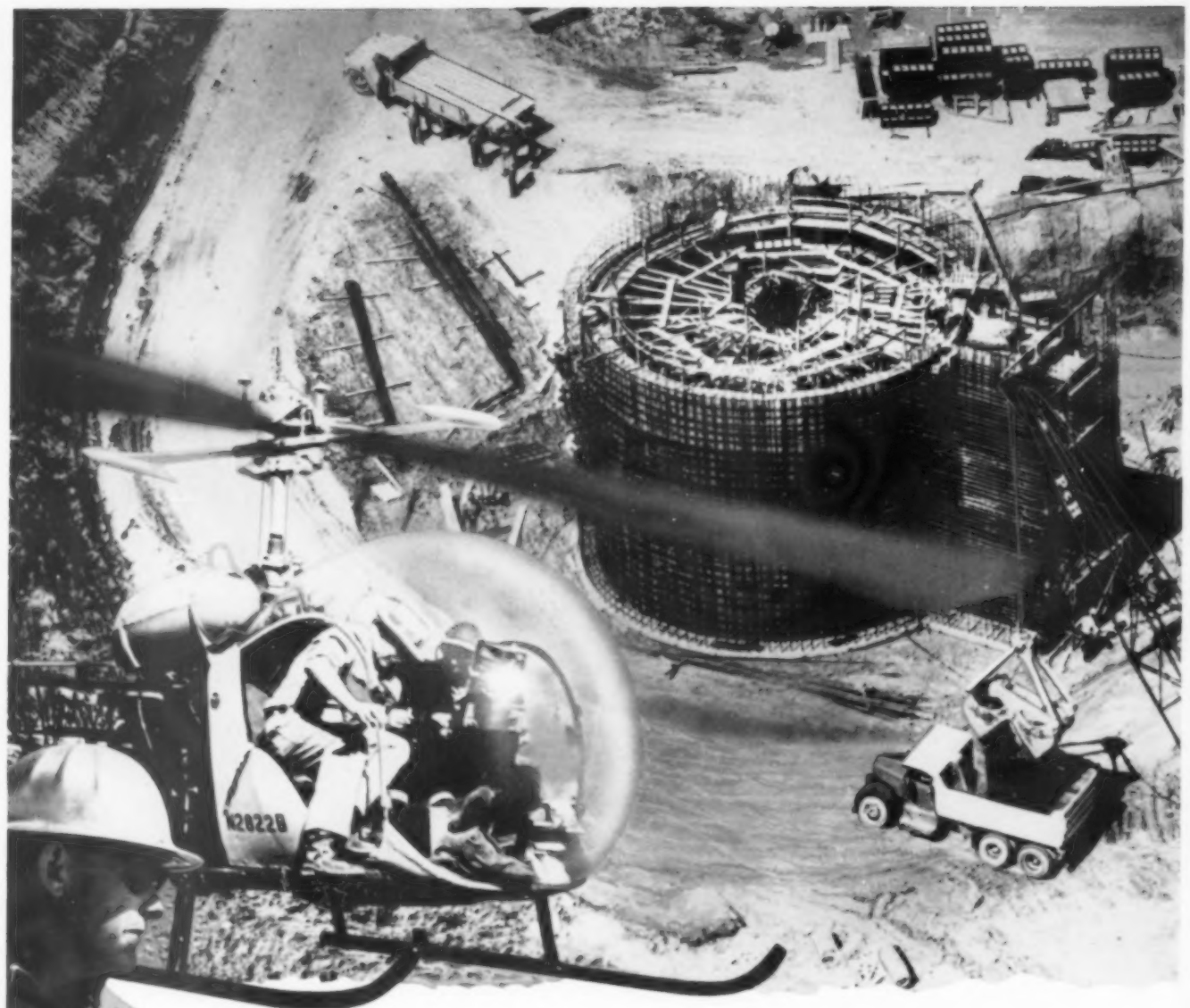

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AIR Report
Significant Trends and News

U. S. LIGHTPLANE PRODUCTION TOTALED ABOUT 7,600 AIRCRAFT DURING 1960, with factory billings of about $150,000,000 and retail value of about $190,000,000. Final figures for all companies will not be available until March, but the 1960 totals will probably be about 100 aircraft fewer than those produced during the preceding 1959 calendar year. Billings, however, will probably show an increase of about $31,836,000, reflecting a growing percentage of light twins and rising costs of all models. Preliminary figures for calendar 1960 production show Cessna produced 3,721 airplanes with a retail value of $75.1 million to rank as the No. 1 producer; Piper produced 2,313 airplanes with a retail value of $48.3; Beech produced 962 airplanes with a retail value of $57.3; Aero Commander produced 150 airplanes with a retail value of $14.8 and Mooney produced 173 airplanes with a retail value of $3.2.

EXPORT SALES OF U. S. LIGHTPLANES by four manufacturers totalled 1,484 aircraft valued at $27.3 million during calendar 1960, as contrasted with 956 airplanes worth $14.4 exported in 1959 for a 55% increase in units and an 86% increase in dollar value, according to Irving H. Taylor, export director of the Aerospace Industries Association. "The board and diversified use of American business and utility aircraft in 79 countries throughout the world is gratifying proof of the quality versus price debate constantly taking place in international markets," Taylor said. He said the export sales listed were for Aero Commander, Beech, Cessna and Piper. No breakdown by manufacturers was released. Taylor expects the same firms will export more than $30 million worth of lightplanes during 1961.

PIPER AIRCRAFT IS BOOSTING LIGHTPLANE PRODUCTION 50 PER CENT to keep up with increased sales demand. From a rate of 8.5 airplanes per day during the quarter ended Feb. 1, Piper will now manufacture 12.5 lightplanes per day. Growing sales volume for the new low-priced $4,995 2-place Colt is chiefly responsible for the sharp increase in output. Piper's plant at Lock Haven, Pa., will reach the new production rate by March 1 and its output will be augmented by the new Vero Beach (Florida) factory, which is just now starting production of the new all-metal, $9,995 4-place Cherokee. Output of 1 Cherokee per day in March will go to 5 Cherokees per day by summer. The Lock Haven plant produces the Apache and Aztec twins, the single-engine Comanche, the Super Cub, the new Colt and the Pawnee agricultural airplane.

NEW FEDERAL AVIATION AGENCY ADMINISTRATOR is Najeeb E. Halaby, 45, Los Angeles attorney and financier who has been a private pilot since 1933, was a Lockheed test pilot from 1941 to 1943, a Navy test pilot from 1943 to 1946, has his own law firm and is secretary-treasurer of Aerospace Corp., which is the principal technical adviser to the Air Force ballistics missile and space program. In announcing his appointment, President Kennedy issued a statement which said: "We have looked for the best qualified and professionally competent man. We have found him in Jeeb Halaby of Santa Monica. He reports directly to me and will be my principal adviser and ad-

FLIGHT MAGAZINE

FEBRUARY, 1961 VOL. 50, No. 2

THIS MONTH'S COVER groups three Beechcraft Barons in flight. The new Baron is being delivered to Beech distributors in growing numbers and strong orders have forced Beech to increase production. Powered by two fuel-injected 260-hp. Continental engines, in flat nacelles, the 4-5-place Baron cruises 216 mph. on 24 gals. of fuel hourly. For details, see page 18.

—(Beech Photo by Jim Yarnell.)

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GEORGE E. HADDAWAY, Editor-Publisher; TOM ASHLEY, Managing Editor; FRED N. STONES, JR., Business Manager; LOUISE ROBERTSON, Circulation; E. H. PICKERING, Consultant; P. O. Box 750 (2700 N. Haskell Ave.), Dallas, Texas — Telephone TAylor 3-6191.

FLIGHT MAGAZINE, February, 1961, Vol. 50, No. 2. Published Monthly. Publication Office, P. O. Box 750 (2700 N. Haskell Ave.), Dallas, Texas. Price 50 cents single copy. Subscription rates: United States, one year, $3.00; two years, $5.00; three years, $6.00. Established February, 1934. Entered as second-class matter at the Post Office, Dallas, under the act of March 3, 1879.

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ministrator of the Federal Aviation Agency." Halaby is a native of Dallas. He succeeds E. R. Quesada, who will operate a major league baseball team at Washington.

NEW 2-PLACE LIGHTPLANE OF UNCONVENTIONAL DESIGN is being prepared for first flight by C. G. Taylor, chief engineer and vice president of Saturn Aircraft at Oxnard, California, which is also producing a new lightweight twin. Taylor designed the original Cub and founded Taylorcraft.

PRODUCTION VERSION OF THE 3-PLACE MORANE-SAULNIER MODEL 880 RALLYE, with 90 or 100-hp. Continental engine, has been completed at Paris, France, and the firm said its 4-place 145-hp. Super Rallye prototype will be completed in February. Morane-Saulnier will produce 4 planes in April, 16 in May, 20 in June and reach a rate of 30 airplanes per month in July. Sales in the U. S. will be offered by Coleton Aircraft of Deerfield, Illinois, (see page 42 for details).

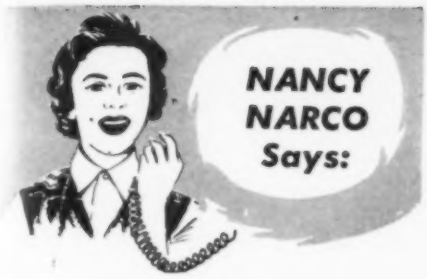
NEW 554-HP. ASTAZOU II TURBOPROP ENGINE has been certificated in France, according to Turbomeca. It is rated at 420 hp. for cruising operation. Turbomeca has been flying a Beech Travel Air powered by two Astazou turboprops.

BEECH AIRCRAFT AND SFERMA OF FRANCE have signed an agreement for "further development and application of turboprop engine installations in Beechcraft airplanes." SFERMA is a firm at Seine, France, whose complete name is Societe Francaise D'Entretien et de Reparation de Materiel Aeronautique. The agreement provides for "an ultimate objective of introducing and marketing production airplanes at some future date" and continuing development of turboprop power for various Beech models.

INCREASED SALES OF CESSNA AIRPLANES during the first quarter of Cessna Aircraft's 1961 fiscal year were reported by Dwane Wallace, president, at the firm's annual stockholders meeting last month. Wallace said he anticipates record commercial aircraft sales for 1961 but military sales of both aircraft and electronics will be lower. Reporting "excellent" market response for his 1961 models, Wallace said the new 172 Skyhawk is making a good showing "and we expect the new Model 185 Skywagon will make a nice contribution to 1961 sales volume when deliveries start in the spring."

BILLION-DOLLAR AIRPORT IMPROVEMENT AND EXPANSION PROGRAM will be needed in the U. S. during the next four years, according to a joint survey just completed by

(Continued on page 56)



PATIENCE, PRUDENCE, CHARITY

Since we're from near Philadelphia, these kindly words of advice attributed to Poor Richard come readily to mind as being appropriate for any of us who have occasion to use the wonderful aviation communications system that's available to us.

Patience. When you've pressed down the mike button and rattled off your request, don't be impatient if you don't get an instant reply. And don't start cussing your radio. The man at the other end may be tied up on the phone or talking to someone else on another frequency. Pause, be patient before you clog the frequency with an impatient repeat.

A little patience is especially important when you're calling on Unicom. Whether it's 122.8 or 123.0, it's still a courtesy service provided by the fixed base operator. He's not obliged to monitor the Unicom every minute of the day. Consider that he may be outside the office, or busy with one of the thousand and one chores involved in his operation, and keep cool til he can get to you.

Prudence. Using good judgment before you fire up the transmitter will not only be appreciated by the other fellow, but will save you the trouble of unnecessary calls. For instance, before you call for weather, check the clock first. It may be just about scheduled weathercast time and your call — unless it's really urgent — will hold things up for everyone else tuned in. And when calling Tower or Center, don't butt into other people's conversation. Listen to what's going on and make sure the other party is squared away before you start calling in.

Charity. Every once in a while somebody goofs. It could be from inexperience, as in the case with students who have trouble keeping up with rapid-fire communications. With a controller, it could be a case of too much to do at once. At times like this, a little charity will go a long way. Put yourself in the other fellow's shoes and be lenient instead of critical.

And if you think about all the help the controllers give you faithfully at all times — you'll realize what an excellent job the boys in the Centers and Towers are doing. Actually, they're the most patient, prudent and charitable group you can find.

Regards,

Nancy

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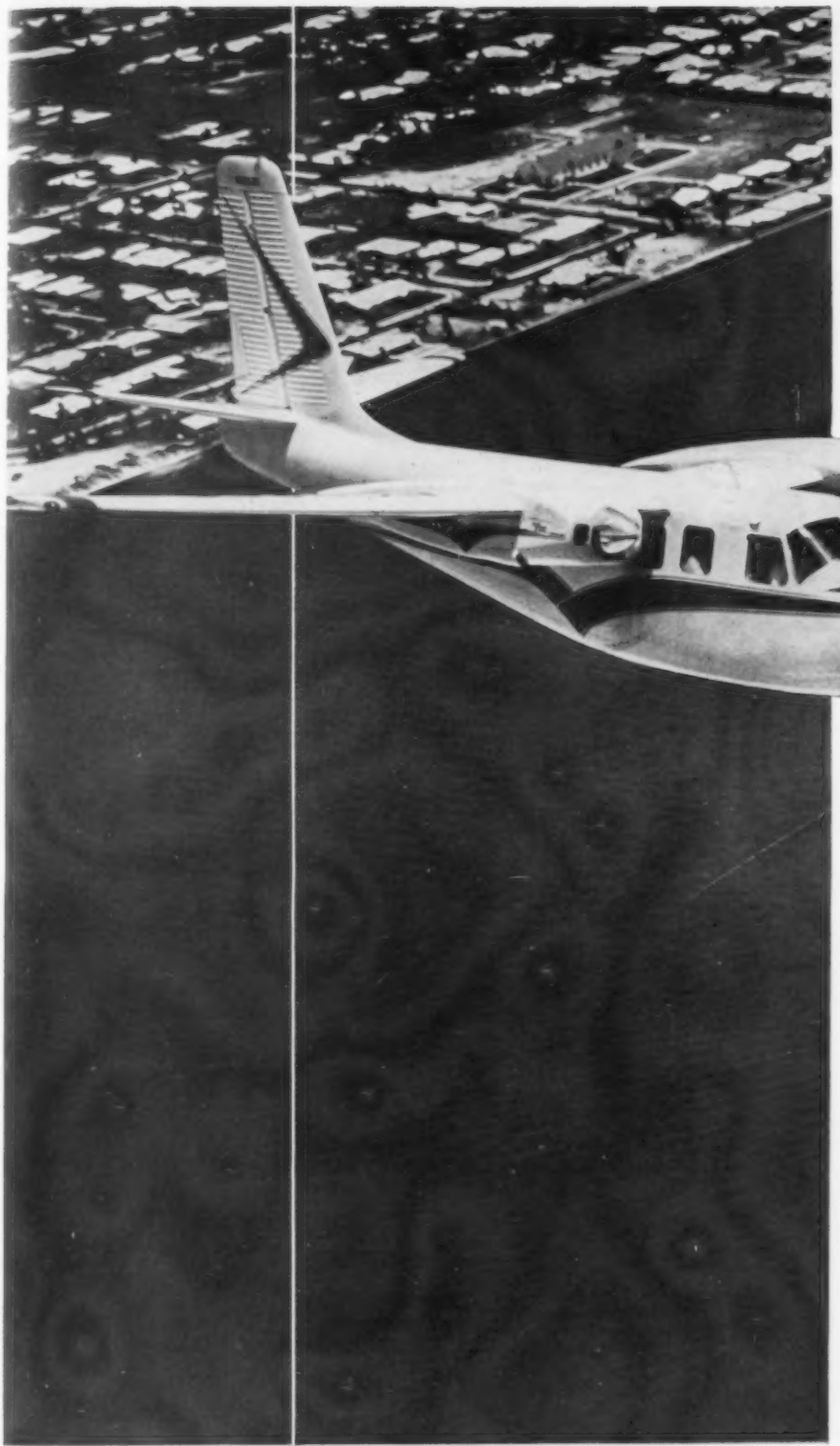

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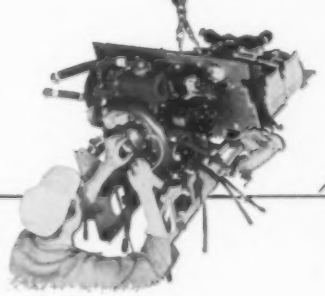

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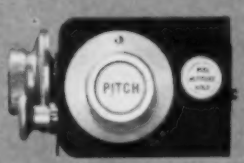

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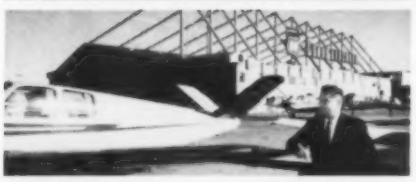


TOP: Earl Draper, parts manager. • CENTER: Bob Cloughley, general manager. • BOTTOM: Dale Norton, service manager.

SALUTE! For 22 years of faith in business aviation . . . Longtime distributor and service headquarters for Beech Aircraft in Colorado, Wyoming, Montana and part of Nebraska . . . Dependable shops . . . Popular transient stop . . . Hospitable and friendly . . . Our good friend and customer in the sale of famous-name units, parts and supplies.

DALLAS AERO SERVICE

Love Field • Dallas, Texas

TOP: Big, modern plant • CENTER: L. to R.: Secretary Neva Yeager, Buyer Bill Revis, VP-Genl. Mgr. Eugene Bailey, Maj. Bill Long, Purchasing-Stores Supt. Lee Urghart, and Buyer Bob Baker. • BOTTOM: Action in engine shop.

SALUTE! For—since the early '20s—making its good name synonymous with progress at Dallas' dynamic Love Field . . . Dallas Aero today is a national leader in transient service and in executive airplane and engine maintenance . . . Founder-President W. F. (Bill) Long is "Mr. Aviation" to just about everybody in the land . . . We sell 'em Eveready, Exide, 3M, Ozicote, Bendix Red Bank, Aeroquip, Scintilla, Stromberg, Hamilton Standard, Goodrich, Andrew Brown primer and thinner, Bendix Pacific, Poil Penetrating Oil, AeroDuct, Pratt & Whitney, Utica, AC, Marquette, and General Logistics.

THE DISTRIBUTION DIVISION

Southwest Airmotive Company

Serving America's Heartland with Flying's Finest Supplies

KANSAS CITY • ST. LOUIS • DALLAS • DENVER • HOUSTON

Just among ourselves

Big Business

As more and better utility airplanes are sold to more people, the larger the financial requirements of the distributors and dealers. Adequate financing and fiscal management now vie with sales effort as the major concern of airplane sales outlets.

Airplane merchandising has now become "big business" in the true sense of the phrase. Last years' volume hit the $200 million mark. Because of the financing required by the average sales organization and because so many purchasers prefer to finance their new airplanes, we find the peculiar situation of the banks often making more money out of the business than the seller.

On a recent 4,000-mile flight through the East and South, we interviewed a number of airplane dealers and distributors. In practically all cases, their operating capital requirements were increasing and available capital was less than a year ago in relation to volume of business being done. In other words their volume of business is increasing at a faster rate than retained profits. So they are feeling a pinch for cash.

Many aircraft sales and service companies have invested heavily in expanded facilities. While we found very few examples of over-building, we did see some cases of heavy expenditures in fancy show-rooms and buildings which have brought on higher overhead. They are beginning to realize that they are in an entirely different world than the one they operated in a few years back, a world of high finance. Airplane selling and servicing is now big business. They made it that way with their own efforts. They are the first to admit that they have not had the training or experience to handle some of the financial problems they now face.

Fortunately, the major airframe manufacturers are alert to the situation as is a large segment of the banking fraternity. Because of this understanding, critical situations can be nipped in the bud provided the dealers and distributors will put all their financial cards on the table and seek counsel and advice before a serious financial squeeze engulfs them.

FLIGHT MAGAZINE's personal contact survey also revealed that 1961 in the minds of the sellers will be a better year than 1960. Without exception every one queried admitted their volume of business would be in direct proportion to the amount of sales effort they put forth — that they control their own destiny. Some of the companies were out looking for qualified airplane salesmen and one was seeking a sales manager. Confidence and optimism in the market were plainly evident everywhere.

If any one wants proof of how far we've come in the utility airplane business in the past few years, we can point with considerable pride and satisfaction to the fact that the major problem of the moment is finding adequate finance to continue growth and expansion. Our nation's airplane peddlers realize the over-all economy has levelled off but that they are in a true growth industry because our biggest potential is still untapped.

The New Administrator

ADD to the compliments President Kennedy is receiving for the high quality of various political appointments kudos for finding Najeeb Halaby, who last month replaced Gen. E. R. (Pete) Quesada as boss of the Federal Aviation Agency.

His background includes previous government service, most notably his tour of duty on the Curtis commission, which resulted in the new Federal Aviation Act of 1958. As a pilot he became fairly well known when he did test work for Lockheed during World War II. Educated at Stanford and Yale Law School, his legal background is certainly an asset in the post. Add to this his reported ability in meticulous planning and his penchant for gathering in of all the facts before he takes action.

As in marriage, the first two years under the new Act were probably the toughest ones and we can expect a little smoother sailing in the next year or two. We can also look for less controversy between the users of the airspace and the FAA.

This doesn't imply that the new Administrator won't have his problems. It's a tough job and we doubt if Halaby is suffering from any misconceptions about it.

Aviation people must recognize two important aspects of the situation when a top administrative change comes about. First, the guy is going to need a lot of help. Second, while the tremendous responsibilities of the Administrator's job are staggering, the FAA is not a one-man proposition. The thousands of career men and women in the Agency are still largely responsible for success or failure of their many individual shops.

All segments of the aviation family should wipe out old grudges that derived from the first two stormy years under the new Act so "Jeeb" Halaby can take over his job without any roadblocks, inhibitions or lost motion.

With the decks cleared and old sores healed, we can and must push forward for the aeronautical progress and improvement we all know are possible through cooperative effort. We believe the new administration has picked a good man, qualified in all respects, and we wish him luck.

Scare Headlines

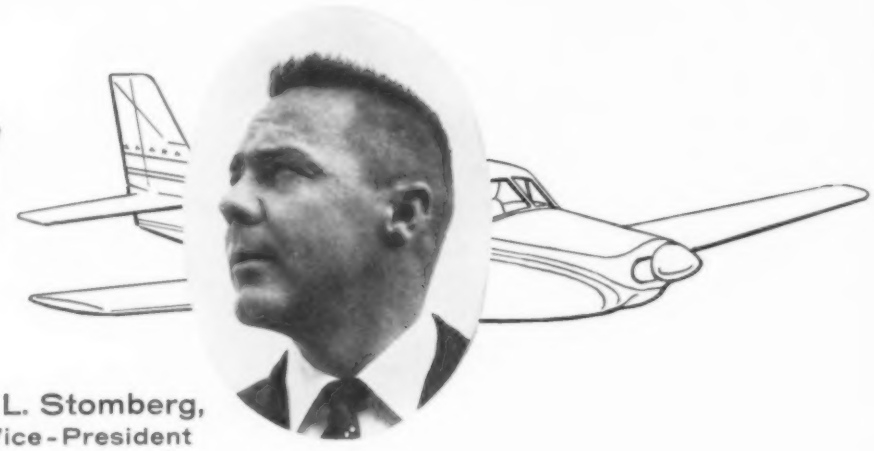
THE official publication of the American Association of Airport Executives for January points out the vast difference between newspaper coverage of air accidents as compared with that given to slaughter on the highways. The publication observes that the local paper in the AA of AE headquarters city made front page scare headline stories for two

"We gave the

KING KX-100/KI-200 1½ SYSTEM

the

Acid Test!



KING Man Philip L. Stomberg,
Executive Vice-President
Aerodynamics Inc.
Pontiac, Michigan

"This morning we had the pleasure of giving the acid test to our first King KX-100/KI-200 in a customer's Piper Comanche. This is the result of our test flight.

"Pontiac unicom is normally set at 33% volume. At a setting of 25%, Pontiac reported 2 points above normal on volume and clearness. After taking off, at 200' above ground we talked to Detroit area radio 27 statute miles; their reply 5 x 5.

"Called Detroit City tower 600 feet above ground 5 x 5, 25SM; tower reported excellent reception for distance and height.

"Called Flint tower 700 feet above ground and 24 SM away. They replied it was amazing for our altitude to be so loud and clear.

"Called Lansing radio 1200 feet above ground, distance 57 SM. Received no answer and began climb. At 1800 feet above ground began to hear them calling us by number, so first transmission must have gotten through. At this altitude they were able to reach us and stated never had they been able to carry on such distinct communication in this area at this altitude and distance.

"We used Salem omni with equal results, and on landing the omni indicator was still showing at 25' above the ground. This station is 19 SM away."

Philip L. Stomberg

Reports like this constantly reach us from pilots who have experienced the "extra-reach" 10-watt transmitter and the simultaneous NAV and COMM operation of the KX-100. King Certified Dealers personally know the performance of King equipment, and confidently welcome the most exacting tests and comparisons – in professional performance, in quality of components and construction, in size, weight, price—with any other equipments available. Give KING equipment your own "acid test" and be convinced!

The King KX-100/KI-200 NAV and COMM System

KING KX-100 Simultaneous NAV and COMM. 2 receivers —and a 10-watt transmitter. 90 COMM channels—complete NAV coverage with 100 channels—all crystal-controlled. Compact, lightweight. Operates King KI-200 ..... **$1095**

KI-200 VOR-LOC INDICATOR. Provides steering indication on both Omni and Localizer operation, switching electronically. Self-contained unit in standard instrument case. Airline accuracy. Operated by KX-100 or KR-40. **$645**

Sold through franchised dealers in U. S. & Canada — Export by REA International, 80 Broad St., N. Y.

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Olathe, Kansas

Builders of TOMORROW'S Aircraft Equipment TODAY!

Ask Your King Man about Proved Professional Performance of all KING equipment

King does more than select dealers with special care (you've got to be good to be a King Man!) King Certified Dealers themselves are a hard-headed lot. They have to be *shown!* Each dealer *knows* the performance of King equipment—can tell you about it—and will be pleased to prove it in your own aircraft. There's a King dealer convenient to you. See him.

KY-90 TRANSMITTER/RECEIVER. 10-watt output. Complete COMM coverage—90 channels, plus DCS. 118.0 to 126.9 MC. Synchronous tuning of transmit and receive. Long reach combined with sensitivity, crisp clear speech..... **$795**

KR-40 NAV RECEIVER. Complete NAV coverage—100 crystal-controlled channels. One microvolt sensitivity. Operates KI-200 VOR-LOC Indicator. Built-in power supply and speaker amplifier. Extra-compact and lightweight..... **$435**

KA-10 ISOLATION AMPLIFIER. Eliminates loading effect, provides strong, clear, undistorted speaker volume from all radio equipment. 6 inputs (4 headphone, 2 speaker) in a unit smaller than your hand, weight only 14 oz. 14-v.,..... **$79.50** (KA-11, 28-v., **$89.50**)

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KING RADIO CORP.
Olathe, Kansas

successive days out of the UAL/TWA collision over Staten Island, and continued front page coverage of the pre-Christmas accident for the better part of the week. The same newspaper used a total of seven inches, one column, the latter part of December, for a wrap-up story of 488 deaths in auto accidents over the holiday week-end, treating the whole subject "in a very matter-of-fact tone but giving the impression that it wasn't such a bad thing after all because the nation managed to stay under a figure of 510 deaths predicted by the National Safety Council."

"Maybe," continues the AA of AE editor, "it's a good thing that the press and the public are not so complacent about air accidents as they are about highway deaths. Nobody seems to give a damn about 40,000 per year motor vehicle deaths and so the slaughter continues. There are those who are concerned about aircraft accidents and so, thanks to them, the accident rate continues to improve."

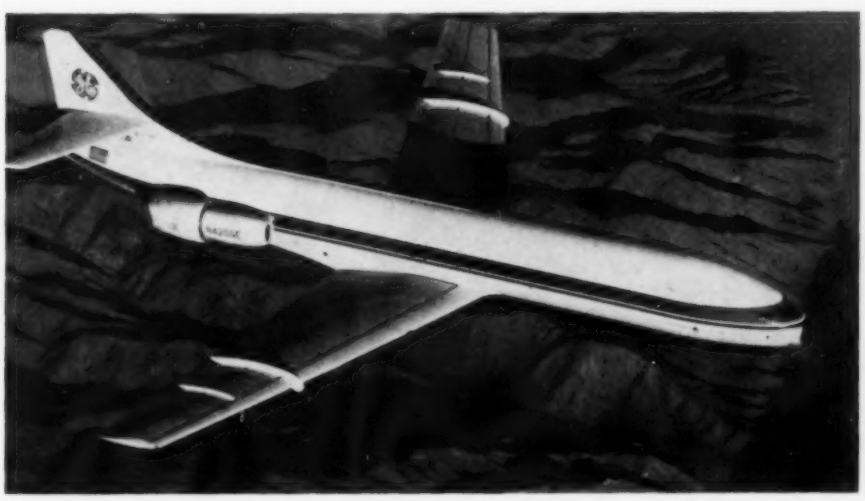
We had never thought of this angle; perhaps there are silver linings in every cloud and that progress might be stimulated and accelerated by flamboyant coverage of aircraft accidents. Before we adopt this theory, however, let's find out what effect fear has on airline ticket and airplane sales. Do aircraft accident scare headlines actually scare off the trade? Do aircraft accidents discourage private flying?

Gene Abney

IT'S with sincere regret we read of Arthur E. Abney's departure from his long and fruitful work with the Illinois Department of Aeronautics, starting twelve years ago as a safety representative and ending up in the top spot as director. Few state aviation officials have ever matched Gene's dedication to aviation and constructive accomplishments.

He will especially be remembered for his pioneering efforts in "safety through education" and for his hard-hitting airport development program, which gave Illinois the distinction of having an airport at least every thirty miles no matter what compass course you fly across the state.

We wish him all success possible in his affiliation with American Airlines and hope his new duties will not divorce him from the developmental aspects of aviation in which he distinguished himself and made Illinois a shining model in the field of state aviation administration.



Caravelle VII with Turbofan Engines

GENERAL Electric is flight testing its Caravelle VII jet airliner after modifying it and installing twin General Electric CJ-805-23 aft-fan engines, each rated at 16,100 lbs. of thrust. This power represents a 40% increase in thrust over the airplane's original straight-jet engines. The new turbofans significantly shorten the take-off run, extend the range 40% and increase the 540-mph. Caravelle's cruising speed. General Electric bought the airplane and installed its own engines to demonstrate performance improvements available with fan engines. The General Electric flight test project will help Sud Aviation of France and Douglas Aircraft gather data for U. S. certification of the turbofan-powered Caravelle VII, for which General Electric expects to obtain provisional FAA certification in June. Douglas is sales agent for the short-medium-range Caravelle in the U. S. and elsewhere, except in Europe.

Every inch a Beechcraft, the new Debonair carries four big people and their baggage at speeds up to 195 mph. Range, with reserve, is over 970 miles. Continental fuel injection engine makes starting smooth and easy in any weather, gives precise fuel metering for accurate flight planning, and completely eliminates carburetor icing.

Big, uncluttered Debonair panel has everything where you want it, with plenty of space for extra nav-com equipment. Notice simple engine instrument grouping.

Amazingly easy to fly, the Debonair's big fast-acting flaps and rugged, wide-tread landing gear let you operate easily and safely from all kinds of fields.

New Beechcraft Debonair...Have You Flown It?

If you haven't yet flown the new Beechcraft Debonair, the best advice we can give you is this: don't buy any single-engine airplane until you do.

As thousands of Beechcraft owners can tell you, there is no substitute for Beechcraft quality. From the point of its glistening spinner to the tip of its jet-swept tail, we firmly believe that the sleek new Debonair is more airplane, dollar for dollar, than anything else anywhere near its price. And, like all Beechcrafts, the Debonair is built to keep giving you reliable and economical service for years.

Inside the Debonair's spacious cabin, you relax in a new world of quiet flight and foam-cushioned comfort. Its big windows give you unsurpassed visibility on the ground and in the air. Its upholstery fabrics are specially treated to resist soiling and staining and to stay beautiful for years.

As a pilot, you'll appreciate the Debonair's big flight-planned panel and control arrangement with convenient grouping of related instruments and controls, its precise instrumentation, the roominess of its cockpit, and the Debonair's exceptionally easy handling and "big plane" stability.

But the best way to learn about the Debonair is to fly it yourself. Beechcraft distributors and dealers invite you to do it soon. How about it?

Write today for latest information on low-cost Beech leasing and financing plans. Address: Beech Acceptance Corp., Wichita 1, Kansas, U. S. A.

Beechcraft

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

When you command a Beechcraft Super G18, you command the airplane that's a favorite of pilots the world over for its ruggedness and reliability under all kinds of conditions. With its big 450 hp Pratt & Whitney engines, the Super G18 carries big loads at high speeds, goes into and out of even the smallest airports with ease and safety.

Roomy cockpit has space for dual instrumentation, dual nav-com equipment and panel-mounted radar scope.

Passengers feel at home immediately in the Super G18's spacious separate passenger cabin with wide center aisle and new Skywide panoramic windows. Food bar and private lavatory make long trips in the Super G18 a pleasure.

Beechcraft Super G18...Excitingly New for '61

Few airplanes in history have earned the kind of respect and affection that thousands of professional pilots have for the Beechcraft Super G18.

If you haven't made a close inspection of the new Super G18 lately, you owe it to yourself and your company to bring yourself up to date on the latest advancements in this remarkable business transport.

Beechcraft distributors and dealers have a standing invitation for you to see and fly it at your earliest convenience. Why not do it soon?

As you enter the cockpit, notice how much room you have to work. Check the visibility through the big wrap-around windshield. Adjust the chair to the exact position *you* prefer. Comfortable? Let's fly!

As you take the Super G18 upstairs, ask yourself whether any other airplane offers you so many of the advantages you want. Check them off: All-weather usefulness, with modern weather radar and a wide choice of factory-installed radio and navigation equipment . . . big load-carrying ability that lets the Super G18 carry up to 9 people . . . speeds up to 233 mph . . . fuel capacity to carry a full load of passengers and baggage over 1,000 miles . . . amazing short field capabilities . . . plus extremely low operating and maintenance costs.

See it, fly it, compare it—and we know you will be satisfied with nothing less than a Super G18.

Write today for latest information on low-cost Beech leasing and financing plans. Address: Beech Acceptance Corp., Wichita 1, Kansas, U. S. A.

Beechcraft

BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

Large vertical tail, dorsal fin and flat engine nacelles are distinctive markings of the 4-5-place $58,250 Beech Baron. It is powered by two 260-hp. fuel-injected Continental engines, grosses 4,880 lbs. for take-off and landing, has 1,920-lb. useful load and cruises 220 mph. —(Beech Photo.)

The Baron—Star Performer For Beech

By TOM ASHLEY

IF you see people grouped around a Beechcraft dealer's ramp, the chances are good they're looking over the details of the newest and "selling-est" of all Beechcrafts, the Baron speed-twin. Get a hop in it and you'll understand how enthusiastic a prospect can become in the Baron — it's the performance star of all Beechcrafts. Since its introduction a couple of months ago, growing orders have forced the factory to schedule production increases to keep up with the demand.

We got the picture on a hop from Dallas to Houston, where we saw the crowds gather at Marvin DeWoody's Business Aircraft, Inc., open-house showing of the new 1961 Beechcrafts. The Baron covered the 248-mile hop in 1 hr. and 6 mins. That's about 226 mph. With Hook Gaston of the factory after the Houston show, we saw more of the Baron's performance (Hook's so busy making open-house showings we had to grab him on the run). Here are some examples with three different power settings at an altitude of 8,000 ft., with outside air temperature of 37 degrees F.:

At 45.5% power, 170-mph. indicated airspeed, 193-mph. true airspeed (19 ins. of manifold pressure and 2,100 rpm.).

Flatness of engine nacelles is seen in this flight view of the Baron. Note also large expanse of cabin glass area. Standard usable fuel capacity is 112 gals. and optional usable fuel capacity is 140 gals. At 65% hp. and 216 mph., fuel consumption is 24.5 gals. per hour; at 45% hp. and 184 mph., it is 17.5 gals. per hour. —(Beech Photo.)

Low-to-ground design of the Baron is seen in this photo and the view below. Top of vertical tail is 9.6 ft. above the ground. Note under-wing exhaust, shown with cowl flap open. —(Beech Photo.)

At 55.5% power, 179 IAS, 204 TAS (19.5 ins. and 2,300 rpm.).

At 65.5% power, 192 IAS, 218 TAS (22 ins. and 2,300 rpm.)

In other words, the Baron's fast. That's why people clump around it at the shows and that's why all the orders are rolling into Wichita — that and its price of $58,250. There are lower-priced twins and higher-priced ones but no other twin can match the Baron's speed-price combination.

This is unusual for Beech. For as long as we can remember, Beech has priced its airplanes over and above the competition. But not so with the Baron. This is a truly historical airplane in that it breaks the Beech barrier — and the salesmen and customers love it. Its competition is the fast Cessna 310F speed-twin. Both airplanes have 260-hp. fuel-injected Continental engines, both have virtually the same weight and dimensions. But instead of being priced higher than the Cessna, in keeping with Beech tradition, the Baron is $4,250 lower than the $62,500 310F.

Thus the Baron sets the stage for an all-out competitive battle with Cessna for the speed-twin market and the customers never had it so good. Significant refinement can be expected as Airplane B and Airplane C vie for the all-mighty customer's favor. Our personal opinion is that B and C are so close together in speed that speed alone will not be as much of a factor as details — craftsmanship in construction and finish, equipment standards, comfort, handling characteristics and follow-up service from dealers as well as from the manufacturers. While we don't want to speculate on future trends in details, it is known that Cessna's next 310 upgrading will offer the customer turbosupercharging. But anything Cessna does in the 310 category, Beech can do likewise. So there's no telling where it will all lead, except that progress is in the making — real progress, thanks to all-out competition.

But back to the Baron. Just because it offers more speed than any other Beechcraft now on the market is no reason to call it a "hot rod" or a "bomb." Although the temptation is great, such endearing terms would be unfair if not actually misleading in such matters as handling characteristics. The Baron was evolved from the Travel Air, and no twin has ever offered more stability or finer handling qualities than the Travel Air. The Baron retains these qualities and, in some respects, even improves them. It

Front view shows small frontal area of Baron's fuselage and nacelles with 78-in. props. Interior of cabin is 8 ft. 6 ins. long, 3 ft. 6 ins. wide and 4 ft. 2 ins. high. Baron has span of 37 ft. 10 ins., length of 26 ft. 8 ins. Note landing lights in wing leading edge, open cowl flaps. —(Beech Photo.)

In this full-scale Baron cabin demonstrator, optional fifth seat is installed in baggage area. Two rear seats are fully reclining and are on tracks for easy positioning for 34.5 ins. of leg room. Note full-size window for fifth seat occupant. Photo at right shows large center arm rest up front, throttle quadrant and instrument panel.

—(Beech Photos.)

replaces the TA's little 180-hp. engines with husky 260-hp. Continentals for all the extra "go" and matches the more favorable power loading with a higher wing loading for better handling, especially in turbulence. The Baron's inherent stability makes one wonder whether an autopilot could offer any cruising improvement whatever — with hands and feet off in cruising trim, it just bores straight ahead, seemingly grooved without any desire to hunt. One of the favorite Beech demonstrations is to trim the Baron with gear and flaps down for a gliding descent at about 100 mph. and let it go, hands and feet off. The nose will oscillate up and down gradually, but the airspeed will stay between 80 and 110 without any alarming build-ups and no tendency to spiral.

Excellent single-engine performance is one of the Baron's major features. Demonstrations include feathering the right engine with hands and feet off. In our hop, this was at an altitude of 6,500 ft., from which the Baron was then climbed at 111 mph. IAS on one engine to 7,500 ft. in a little less than 3 minutes, averaging better than 350 fpm. rate of climb. Trimmed for single-engine cruise at 7,500 ft., using 22 ins. of manifold pressure and 2,450 rpm., the Baron indicated 146 mph. for a true airspeed of about 164 mph. on one engine. Single-engine stall was at 90 mph. with power. Two-engine stall without power was at 78 clean and 75 with gear and flaps extended. With power, two-engine stall was at 67 clean and 57 with gear and flaps extended.

Although there were four of us on the hop, the Baron was at less than gross weight because we had less than 100 gals. of fuel. Therefore the performance was better than that specified in the airplane manual, which is based on full gross weight at all times. Manual performance for the Baron at 4,880-lb. gross weight includes the following: 220-mph. cruise using 75% hp. at 7,000 ft.; 216-mph. cruise using 65% hp. at 10,500 ft.; 182-mph. using 45% hp. at 10,000 ft.; 1,630-fpm. rate of climb at sea level; 305-fpm. single-engine rate of climb at sea level; 92-mph. minimum single-engine control speed; 19,200-ft. service ceiling; 6,800-ft. single-engine service ceiling; 910-ft. take-off run and 1,175-ft. landing roll.

Nose baggage compartment has 270-lb. capacity and enables pilot to spread his baggage weight. Radio gear is installed between this compartment and instrument panel. Nose also carries 50,000-BTU heater as standard equipment.

—(Beech Photo.)

Standard usable fuel capacity is 112 gals., and optional usable fuel capacity is 140 gals., all inside the wings. Beech computes several interesting range conditions for the Baron, including fuel consumed in taxiing, engine run-up, take-off, climb to altitude, cruising flight and 45-minute reserve based on holding at 45% hp. These range computations include the following:

140 gals., 17.5 gph. at 45% hp., 12,000 ft., 184 mph., 1,220 miles.

140 gals., 20.3 gph. at 55% hp., 12,000 ft., 204 mph., 1,180 miles.

140 gals., 23.5 gph. at 65% hp., 10,000 ft., 215 mph., 1,080 miles.

140 gals., 27.6 gph. at 75% hp., 6,000 ft., 217 mph., 948 miles.

This speed-range versatility is combined with a 1,920-lb. useful load for the Baron's gross weight of 4,880 lbs., which is also its maximum landing weight. With full tanks for 140 gals. of usable fuel, over 1,000 lbs. is available for people, equipment and baggage. With full tanks, four people and 40 lbs. of baggage for each, for example, this provides for about 150 lbs. of navcom radio installations and other equipment.

Flexibility is provided for loading and for cabin comfort. The rear seats are on tracks for easy positioning fore and aft, providing up to 34.5 inches of leg room. Seat backs are fully reclining. A fifth seat is available for easy installation behind the left rear seat, occupying about half of the 33.5-cu. ft. rear baggage compartment.

A nose baggage compartment carries up to 270 lbs. and enables the pilot to spread his baggage loads as needed.

Placard speeds for the Baron include 180-mph. maximum maneuvering speed, 150-mph. landing gear extension

(Continued on page 52)

Close-ups show installation of first 250-hp. Allison T-63 turbine in a helicopter by Bell in a modified 4-place Model 47J-HUL for the Navy. Note shaft extending rearward to reduction gear box for tail-rotor drive.

Bell Flying First 250-Hp. Turbine

FLIGHT tests were under way early in February with the first 250-hp. lightplane turbine engine to be delivered by Allison Division of General Motors. Installed by Bell Helicopter Company in a 4-place Navy version of the Bell Model 47J Ranger helicopter, the small turbine is the Allison Model 250-C2 known as the T-63. It weighs only 128 lbs. but is rated at 250 shaft horsepower at 6,022 rpm.

Bell has modified two of the 4-place copters for installation of the little turbine under a Navy contract. They are designated as the Navy HUL-1M utility copter. The HUL-1M has a 2,850-lb. gross weight, 1,350-lb. empty weight and 1,500-lb. useful load. Maximum speed is 105 mph., service ceiling is 18,000 ft., and hovering ceilings are 13,900 ft. in ground effect and 9,400 ft. out of ground effect. Ground-operated tests preceded flight tests. Complete evaluation will follow the basic flight test program, with one of the two HUL-1M's going to Allison's plant at Indianapolis for tests there.

Bell is one of numerous manufacturers currently competing in a U. S.

(Continued on page 53)

Drum-type fuel tank beneath rotor occupies space formerly used for piston engine, with miniature Allison turbine riding atop the frame. Allison T-63 weighs only 128 lbs. —(Bell Helicopter Photos)

Latest version of popular $62,500 five-place Cessna twin is Model 310F with distinctive pointed tips on wing tanks, spinners and nose. With 1,790-lb. useful load at 4,830-lb. weight, it cruises 220 mph. with 825-mi. range on 102 gals. of fuel or 1,070-mi. range on 133 gals. Note clean lines and flat nacelles for 260-hp. engines. —(Cessna Photo.)

Logging The Cessna 310F

Light twin makes 3-day multi-stop 4-000-mile trip averaging 210 mph.

By GEORGE E. HADDAWAY

YOU leave Wichita, Kansas, at sundown on Thursday. You fly over to St. Louis for a dinner meeting, get to bed early and up betimes to land at La Guardia, New York, at 11:45 a.m. in time for a luncheon appointment and three other commitments Friday afternoon and evening. You leave an early hotel call in order to depart La Guardia at 7:30 a. m. Saturday morning, landing for lunch with the Cessna distributor at Charlotte, North Carolina. Thence on to Fort Lauderdale, Florida, for a two-hour interview and a back-track to Vero Beach by sundown to help celebrate Bill Piper, Sr.'s 80th birthday at the local country club.

On Sunday morning Pug Piper takes you through the spanking new Vero Beach Piper factory, where the Cherokee is going into production. You take off before noon and fly to Jackson, Mississippi, to visit with friends over a late lunch, then on to Dallas for a coffee stop at Addison and into Wichita for supper. Total miles: 4,027. Time in air: 19 hours, 13 minutes. Longest time in air: St. Louis to New York, 3 hours, 37 minutes. Total gasoline consumption: 472 gallons at 35¢ for a total of $165.20 or $55.07 each for the three of us.

You've been flying for years. By now, you figure you should be jaded by the convenience and flexibility of light twin transportation.

You review the trip. From Thursday evening to the following Sunday evening you've done business in St. Louis, New York, Charlotte, Fort Lauderdale, Vero Beach, Jackson and Dallas. You haven't pushed. You're rested and relaxed. Except for take-offs and landings, the flight was automatic — hands off all controls after reaching cruising altitude as you hop from omni to omni along the airways, simply changing your inbound and outbound headings as the omni stations scoot by, locking your course into the autopilot.

The more you think about the trip in retrospect the more impressed you become. You aren't jaded. You've lived in and around airplanes most of your life. You're still astounded by what you've done in three days time, the places you've been, the people you've seen, the low, low cost. You can't take such transportation for granted.

You buy a lot of airline tickets. The jets are for you. Then you call the airlines and ask for schedules and prices. You find it would take a week to duplicate the trip and tickets alone would cost the three of you a total of more than $1,000. You would have to go when the airlines go — not when you wanted to go. But the airline would be your only alternative to the modern business airplane — rail or highway would be next to impossible from a time standpoint alone.

Then the real clincher hits you squarely in the face. "How come", you ask, "more American businessmen haven't discovered the modern light twin?"

Or, "How come we sell these airplanes in the hundreds instead of thousands?"

A host of other questions start yeasting in your mind. You wonder what the industy is failing to do so that thousands of additional businessmen and pleasure seekers will buy some modern wings and get off the ground. We're convinced that our 310F flight in January contained a lot

of factors that can be used to sell more airplanes. We believe that if every legitimate prospect could experience a similar flight, preferably paying for it as a charter deal, we could practically eliminate that awful phrase in common usage from aviation nomenclature, namely, the "cold" call.

Cessna has delivered some 1,500 Model 310's since the first delivery back in July of 1954. Every year improvements to the basic design have followed the traditional industry formula: additional refinements with each annual model change.

The 1961 5-place 310F is no exception. Powered with two Continental IO-470-D fuel injection engines rated at 260 hp. each at 2,625 rpm, its performance, power and gross weight are the same as the predecessor "D" model. But the refinements are many and varied, extending from items under the cowling to a new appearance and improved comfort. In appearance the major changes are in pointed nose caps given the fuselage nose, the propeller spinners and the wingtip fuel tanks, together with a new third window on each side of the cabin for the benefit of rear seat passengers.

Our three-day, 4,000-mile flight made us wonder how the utility airplane business ever got along without fuel injection, eliminating as it does carburetor icing and inefficiency and making it possible to read off the dial your proper power setting and fuel consumption. Except for take-off and climb, we never did exceed 70% power and for most of the trip we used from 64% to 67%. Fuel consumed averaged 24.5 gallons per hour despite the fact our indication was between 10 and 11 gallons per hour per engine.

Our best segment ground speed was 250 mph. compared with our worst segment of 189 to give us a total trip average of 210 mph. We proved to our own satisfaction that the 310 is an honest better-than-200 mph. airplane by verifying the factory claim of 220 mph. at 70% power at 8,000 feet.

Cruise altitudes varied from 9,500 to 2,500 ft., the latter on a leg in northern Florida under limited visibility conditions due to moderate rain.

The demonstrator furnished by the Cessna factory for the flight, N6705X, was as completely equipped as one could desire without overloading. Many combinations of extra equipment are offered to the purchaser. Our electronics gear alone added up to $32,320 — the factory installed price of the complete ARC-FES 1241 system at $22,630, the Motorola L-2 Autopilot with deluxe flight controller, altitude controller and approach coupler at $6,295, and the ARC CD-1 course director installed with the Dynavia ANC-3 at $3,395.

The vital importance and true significance of electronics to modern flight certainly was impressively demonstrated by the particular installation

(Continued on page 52)

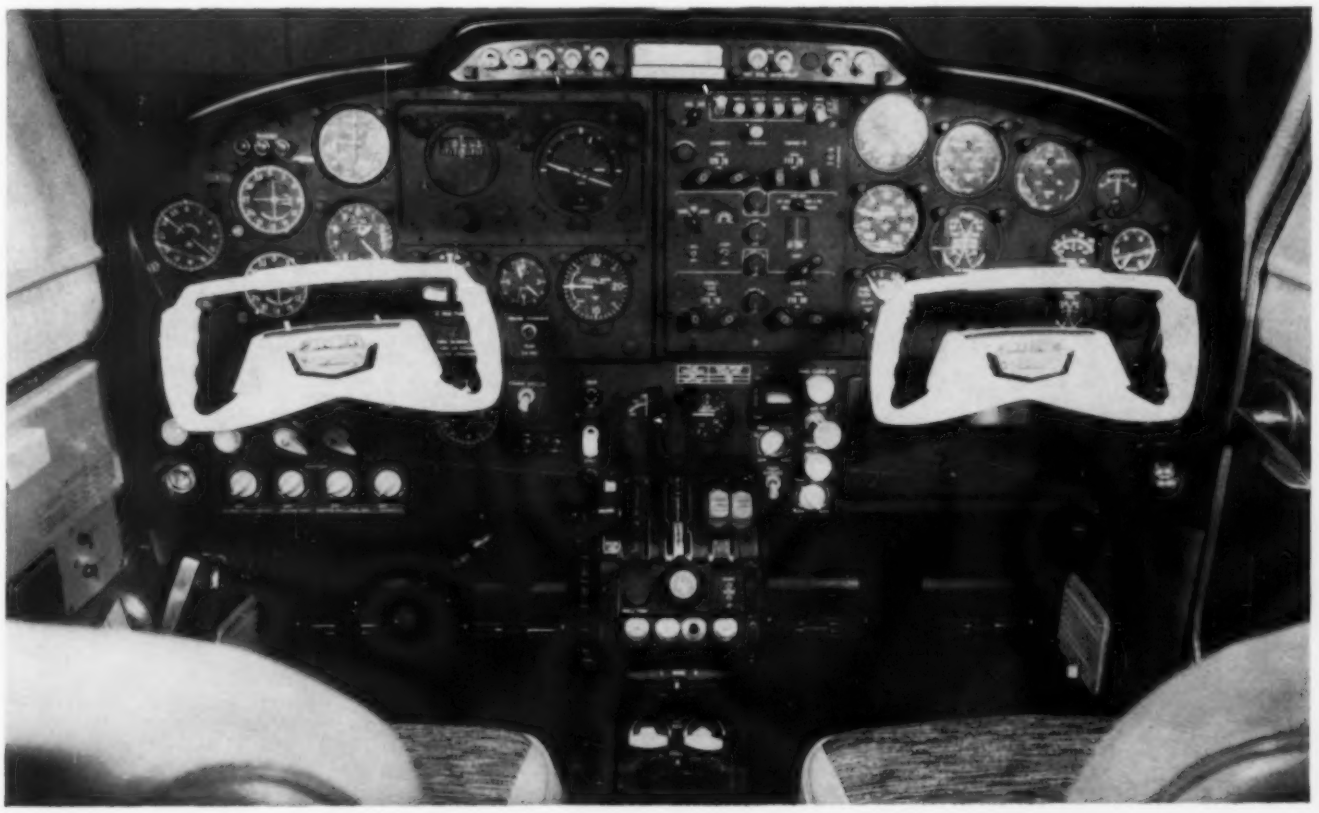
Trip Log

Cessna N6705X, Jan. 5-8, 1961

	Miles	Hrs.: Mins.	AGS, Mph.	Fuel, Gals.
Wichita to St. Louis	357	1:38	220	41
St. Louis to LaGuardia	910	3:37	250	94
LaGuardia to Charlotte	600	3:02	198	75
Charlotte to Ft. Lauderdale	650	3:09	206	76
Ft. Lauderdale to Vero Beach	115	:40	173	17
Vero Beach to Jackson	685	3:26	200	85
Jackson to Dallas	380	2:01	189	49
Dallas to Wichita	330	1:40	198	35
Totals or Average	4,027	19:13	210	472

Instrument panel in 310F has flight group at left, radios at center and engine group at right, with new wrap-around glare shield at top. Dual-indicating fuel flow indicator (beneath tachometer) reads gallons per hour instead of fuel pressure for precise cruise control. Note Motorola L-2 autopilot controller on throttle console with altitude control and approach coupler.

—(Cessna Photo.)



Here are some of the Bonanzas in which over 750 Army aviators received contract instrument flight training. In 55,000 hrs. of IFR instruction for the Army in Bonanzas, Central American Airways Flying Service reported no accidents.

—(Beech Aircraft Photo.)

More Pilots Equipped For Single-Engine IFR

By JAMES R. GREENWOOD

SINGLE-ENGINE IFR? Why not—provided you're trained, qualified and current; and your plane has all the necessary equipment. More businessmen flying today enjoy greater single-engine utility because they are rated and proficient on instruments and go when and where they want to go in legal weather minimums.

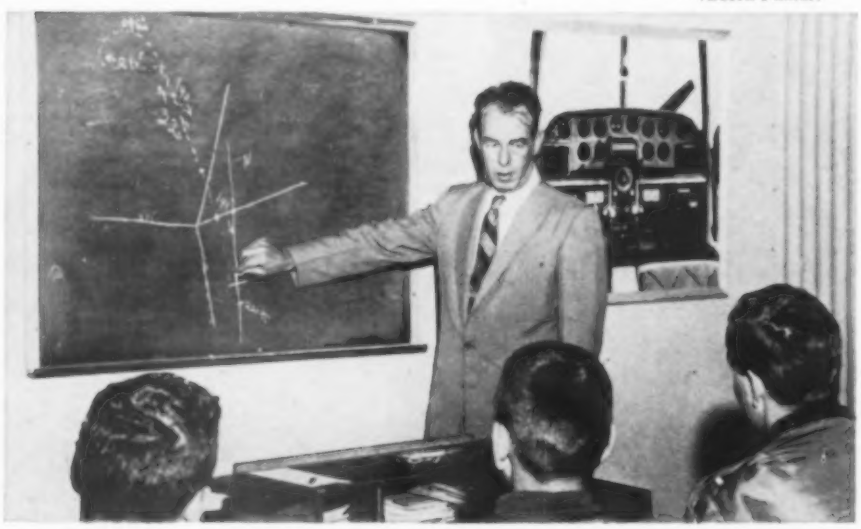
No longer is the question of single-engine instrument operation one of aviation's most controversial topics. Nowadays, at least one out of every three businessmen issued a private certificate goes on to earn an instrument rating, according to latest estimates. There are two basic reasons for this: First — the Federal Aviation Agency's increased emphasis on teaching the fundamentals of instrument flying to student pilots has actually stimulated interest in IFR qualification. Due to more exposure to instrument flight in the early stages of training, new pilots are finding the basic techniques of IFR flying practical to master. Consequently, they are electing to take advanced instruction for instrument ratings in increasing numbers. Second — properly equipped, modern single-engine business planes may be flown on instruments. In fact, in today's increasingly competitive market, all-weather capability has become a vital factor in single-engine sales.

"Customers are going to resist investing $30,000 and upward in a piece of equipment restricted to VFR use," says Kenneth V. Brugh, Jr., president of Greensboro-High Point Air Service, Inc., Beech dealer at Greensboro, N. C. "As far as we're concerned the Bonanza, to name one, is an instrument plane."

EDITOR'S NOTE: This article recognizes the fact that more pilots than ever are acquiring the proficiency and proper equipment required to utilize the IFR capabilities of single-engine aircraft. However, the Editors emphasize that *proper proficiency and equipment are no less demanding for IFR flying today than they ever were and that proficiency includes the pilot's ability to avoid exceeding his or his equipment's IFR limitations.* This ability is required of any successful IFR pilot — businessman as well as pro.

Ralph Crum, flight supervisor, briefs Army airmen on an IFR exercise in flight room. Each civilian instructor carried three students in 70 hrs. of dual IFR flying.

—(Beech Photo.)



Winfield K. Robinson, manager of the contract school, and Capt. Orrin Deuel, 3rd Army, discuss the CAAFS program, largest of its kind ever operated by a civilian organization.

That's why more Bonanza-class airplanes equipped for IFR flying are being sold than those limited to VFR. Based on FAA registration figures, about two-thirds of all active single-engine general aviation aircraft seating three to five persons have communication and navigation packages for instrument operation. And this ratio continues to gain each month.

Among the strongest endorsements of single-engine instrument flying is FAA's proposed revision to Civil Air Regulation Part 47 which would authorize single-engine IFR for hire. In its preamble to the proposed new rule, the FAA states that records do not support the restriction of commercial single-engine operations to VFR flying.

To substantiate its position, FAA points to general aviation statistical reports, noting that the "reliability record of modern engines used in small aircraft is excellent."

But perhaps there's no better testimony of single-engine IFR capability than the experience of Central American Airways Flying Service, Inc., at Bush Field, Augusta, Ga. With headquarters at Louisville, Ky., and other divisions in Seymour, Ind., and Fort Knox, Ky., Central American recently completed a contract with the United States Third Army to furnish instrument flight training to designated Army aviators.

One of several civil aviation organizations in the country contracted to provide Army instrument flying instruction, Central American's school at Bush Field, the Augusta municipal airport, was by far the largest in terms of total students trained and average student load. Civilians, using civil manuals, methods and procedures, conducted all the training under Army supervision.

In four years of successful operation — one at Clarksville, Tenn., and three in Augusta where it moved to utilize more adequate facilities — this school graduated over 750 instrument-rated Army pilots. It flew a total of approximately 55,850 hours without a single mishap or, put another way, nearly 9,500,000 accident-free miles.

Not a student or instructor suffered so much as a scratched finger during the four-year program. And only one airplane sustained minor damage — as a result of hitting a chuck hole in a landing roll. Approximately 10 per cent of all the flying was done under actual IFR weather conditions.

By any standard, this perfect safety record is not only a tribute to the

Instructor Robert Flynn (foreground) readies some navcom problems for his student, shown preparing to close the hood in the Link simulator at left. All instructors as well as aircraft were civilian in this Army program.

—(Beech Photo.)

Central American's instrument flight school at Bush Field, Augusta, Georgia, is shown below, with nine of its 12 Bonanzas on the ramp. CAAFS facilities on this municipal field include 24,200-sq. ft. hangar, shops, offices, pilots' lounge, restaurant, dormitories, ground school classrooms and Link department. In addition to its basic and advanced instrument flying courses, CAAFS conducts civilian flight instruction, aircraft sales and service and charter operations. —(Beech Photo.)

Here's a radio navigation class, with Instructor P. G. Puttuck. In addition to 70 hrs. of IFR flying, the course for Army airmen included 90 hrs. of ground school and 40 hrs. of Link simulator time. This prescribed course lasted about two months for each student, classes consisting of 30-40 students each.

high quality and efficiency of the training administered, it more than amply testifies to the ruggedness, dependability and performance of modern single-engine business airplanes.

For its program, the school operated a fleet of 12 Beechcraft Bonanzas — seven H35 and five J35 models, the latter powered by 250-hp. Continental fuel injection engines. The airplanes were comparable in every respect to standard 200-mph. executive models offered on the commercial market, except that each had complete dual controls and extra equipment for IFR instruction.

Intensive Training

Despite long hours of incredibly hard flying by hundreds of different pilots who were constantly activating all the systems and changing power settings, aircraft maintenance was remarkably low, utilization high.

The prescribed course lasted two months or about 40 working days. Classes averaged between 30 and 40 students. Each student received 70 hours of dual instrument flying or "hood" time, 40 hours of Link simulator and about 90 hours of academic or ground school training. Subjects ranged from ATC clearances and meteorology through elaborate instrument en route procedures to the intricacies of instrument let-downs and approaches.

It should be emphasized that this was an impressively *thorough and intensive instrument course in adherence to highest proficiency requirements*. Its cost per student would probably approximate $2,300 or more in a commercial or civilian program. To fully appreciate the thoroughness required for IFR proficiency, we suggest the reader refer again to the preceding paragraphs.

Students represented all levels of proficiency when they arrived at Bush Field. Though all were rated fixed-wing Army aviatiors, many had been flying rotary-wing craft for so long they were prone to forget that Bonanzas won't hover like helicopters. Yet in four years only three students were eliminated.

By the end of the course, students were meticulous in pre-flight planning and copying clearances. They were well versed in all phases of radio navigation and the functions of ATC centers and approach control. They were highly proficient in the finer techniques of precision roll-out on heading and leveling off at altitude; and could demonstrate perfectly coordinated and timed standard-rate turns, climbs and descents.

Central American flight commanders gave progress checks; Army examiners gave final checks. Upon completion, pilots were issued Army standard instrument ratings. They were also eligible to apply for an FAA instrument rating.

The planes were flown an average of 120 hours a month for training. They flew only five days a week, including some night flying. Most of them logged additional hours, however, as these same Bonanzas were also used for charter flights and other commercial applications. Central American Airways Flying Service, as its name implies, is basically a civil flying service.

"I doubt if any other single-engine airplane could have done this job as efficiently, economically or effectively as the Bonanza," says Winfield K. Robinson, manager of Central American's Augusta division. "Its speed and range permitted us to work more fixes and more approaches in a two-hour training period than would be possible with other types."

In a typical period, for example, instructor and student might fly to Savannah, Ga., or Spartanburg, S. C., each about 120 miles distant from Bush Field, shoot as many as five GCA approaches and then return to Augusta — all within from 90 to 100 minutes.

"Along with its other advantages, we also looked upon the Bonanza as being 'more plane' in its particular category," Robinson adds. "This fact, plus its complement of navigation and communication equipment, enabled us to turn out a more proficient instrument pilot — one qualified to fly more advanced types of military aircraft safely in actual instrument weather."

Radio Equipment

Electronic equipment in each of the 12 standard model Bonanzas included a Dare 360 VHF transceiver, ARC-21 ADF, ARC-15E omni, ARC-T20 transmitter, R20 marker beacon, 13A audio amplifier, R89 glideslope, and complete dual microphones, headsets and flight controls.

"But for routine single-engine IFR, you really don't need a glideslope, although it's recommended," says Robinson. "A suitable business plane package would include a transceiver, two omnis, a good ADF, marker beacon and standby transmitter. Naturally, the standby omni ought to be just as accurate as the primary instrument."

Robinson should know. He started flying in Louisville in 1939, first as a hobby, later a profession. Before returning to Central American, where he had worked previously, Robinson headed the Link department of Hawthorne School of Aeronautics, a U. S. Air Force contract primary flying school at Moultrie, Ga., from 1951 to 1956. A commercial pilot, he holds just about every instructor rating in the book, plus an ATR and even a master parachute rigger's license.

In addition to Robinson, who at one time carried students, gave progress checks, helped overhaul engines, installed radios and personally packed parachutes, not to mention his managerial duties, Central American employed as many as 32 civilians in the Georgia school. They included flight and ground instructors, supervisors, mechanics and other support personnel.

To keep the 12 airplanes flying, two FAA certificated mechanics and three helpers performed all maintenance at night and on weekends. Frequently a

plane would be flown to Central American's home base in Louisville for an engine change, but much of this work was done at Augusta.

Due to the excellence of Central American's preventive maintenance, some engines were operated more than 1,100 hours before major overhaul, then with only an occasional top overhaul at 500 to 600 hours after that. Mechanics constantly studied the general appearance and condition of each engine, ran compression checks, noted oil consumption and hydraulic fluid and looked for tell-tale signs of wear. Thorough post-flight inspections were made daily.

The J35 fuel injection engines realized a longer service life than the H35 powerplants. When a J35 engine was torn down, its cylinders, crankshaft and pistons always appeared in much better, cleaner condition. Central American, incidentally, chromed the cylinders in both J35 and H35 Bonanzas.

Operational Details

Although subjected to punishing hours of continuous operation under a wide range of mechanical and climatic conditions, airframes required little more than routine attention. Total time on one H35 exceeded 4,400 hours. For the most part, after 2,500 to 3,000 hours it was desirable to put in a few new rivets in a nose section and perhaps replace a step cable, inspection plate or spinner.

Excluding depreciation and insurance, the 12 Bonanzas were operated for an average cost of $7.50 an hour, which included fuel, oil, inspections, general maintenance and overhaul. Average fuel consumption was 11.5 gallons an hour, low for such a rugged training operation. For normal cruising, pilots flew at 55 per cent power, yet still averaged about 175 mph.

Most of the instruction was given under simulated instrument conditions, but many flights were made in weather minimums when ceilings were as low as 200 feet and visibility no more than half a mile. This gave students valuable experience in using FAA radio aids and in handling complicated clearances, holdings and fixes in actual IFR traffic.

As every pilot knows, when all air traffic is under absolute IFR control, there's little margin for human or mechanical error. During these periods, students learned to react promptly, positively and precisely.

Needless to say, the intensive training program attracted more than casual interest, especially of the airlines. There are some 20 scheduled airline flights daily at Bush Field — an immaculate airport featuring paved runways 5,300 feet in length, with land available for extensions; a control tower and approach control, both operated around the clock; FAA approved approaches for VOR, L/F and ILS; and a weather office, restaurant and lounge.

Until airline pilots flying in the school's practice area had become familiar with its operations, they'd get slightly shaken up to overhear as many as 12 single-engine Bonanzas working Atlanta or Jacksonville ATC centers in thick soup.

"They'd ask if the sky was full of lost souls or crazy fools," recalls J. Hampton Manning, Jr., Augusta's genial airport manager who has a red carpet of welcome placed at the feet of every arriving visitor. "Soon these same pilots were praising the proficiency of school personnel and students."

In addition, many distributors and dealers of business aircraft brought their customers to Bush Field to observe operations. This shrewdly calculated expedient quickly convinced prospects of single-engine IFR capability.

That the Bonanza's structural integrity, controlability and stability inspired confidence was evidenced by the fact it often demonstrated an ability to fly well in turbulence. At times Central American airplanes were flown through thunderstorm activity, penetrating air gusts exceeding 45 feet per second.

"We didn't deliberately fly into thunderstorms, but we did look for bad weather," says Robinson. "To obtain the ultimate in instrument training, there's just no substitute for the real thing."

Only plane of its class licensed in the Utility Category, the Bonanza is stressed to withstand in-flight load forces of over 11 tons, far in excess of strength requirements. This proved comforting to an instructor and student last summer when they found themselves caught in the fringes of Hurricane Donna. Feeling like they had been trapped by a huge mixmaster in high blower, the fliers finally emerged into smoother air.

Army Completely IFR

Instrument flying is essential to Army development of all-weather capability in the air. As a result, contract instrument flight training for a number of years has been an integral part of a long-range program aimed at achieving 100% instrument qualification for all Army aviators by 1961. Now that this objective is within reach, the schools are gradually being phased out.

First such school to adopt the Beechcraft Bonanza as an Army instrument trainer was Southern Airways Company, Beech distributor at Atlanta, Ga. From 1951 to 1953 Southern, using six Bonanzas, trained 185 students and flew over 7,500 hours to win an Army commendation for outstanding performance. Southern's pioneering program served as a real "proving ground" for the Bonanza, which only a few years earlier had been introduced to the business aviation market.

The impressive accomplishments of Robinson and his associates at Bush Field attest to the high standards of Central American's flight training and support operations. Its enviable record is, in fact, a credit to Wilbur Paris, president of Central American, known throughout the industry for his ability to surround himself with people of extraordinary competence, judgment and dedication.

It now appears that the Army will handle all of its own instrument training in the future. Consequently, Central American will accelerate civilian flight instruction at Bush Field and other branches. An FAA-approved instrument flight school, the Augusta division offers complete courses for both private and professional pilots, including advanced training necessary to qualify for air transport ratings.

New Link Simulators

Recognizing the mounting interest in IFR flying, the Link Division of General Precision, Inc., recently introduced the first ground trainer since World War II — developed specifically for single-engine training. Ranging in price from about $2,000 to $20,000, the new Links are designed for both the novice and the pilot already familiar with instrument flying.

Thirty years ago William Ocker and Carl Crane, leading exponents of instrument flight of that era, wrote that "less than three percent of all pilots could fly five miles into fog, turn around and fly safely out again." Today, most Bonanza pilots can maintain control of their airplane and change direction with no attitude reference outside the cabin, thanks to instrument indoctrination early in their training.

It's the minority we read about — pilots improperly trained or so inexperienced they panic in situations beyond their piloting skills. Generally, they are the ones who ignore all the signs of bad weather in the first place. The solution is simple: stay VFR at all times unless you are instrument trained, qualified and *current*.

New training aids, expert instruction and more stringent pilot requirements, coupled with modern dependable aircraft, reliable lightweight electronic equipment and America's vast

(Continued on page 53)

This air view shows some of the 250 private airplanes and 5,000 visitors gathered at Vero Beach, Florida, last month for the dedication of Piper Aircraft's new Florida factory where the new 4-place Cherokee is in production and to honor W. T. Piper, the manufacturer, on his 80th birthday. —(Piper Photo.)

Florida Launching For Piper Cherokee

JANUARY'S largest aviation event took place at Vero Beach, Florida, on occasion of William T. Piper's 80th birthday and dedication of Piper Aircraft Corporation's new aircraft factory, where the new 160-hp. four-place Cherokee will be manufactured. The new facilities include manufacturing space of 120,000 square feet and an office building of 7,000 square feet.

The first Cherokees will be completed this month with one a day production anticipated by April and five a day by September. The present worker force of 100 will be expanded to 600 when full production is reached.

In addition to Cherokee production the plant will provide all the plastic hoppers and fuel tanks for the Piper Pawnee agricultural plane, manufactured at Piper's Lock Haven, Pennsylvania factory. Nose cowl, wing tips, stabilator, fins and rudder tips for the Cherokee are of fiberglass construction and account for the centralization of all plastic manufacturing at Vero Beach. The company is also experimenting with plastic wings and other components at the new site.

The factory is adjacent to Piper's Development Center, established in 1957. Fred E. Weick, one of the nation's foremost aircraft engineers, heads up this Center, where the PA-25 Pawnee was designed for production in the Lock Haven factory in 1959. Over 600 of these have been delivered to ag operators the world over.

Also a part of the Vero Beach complex is Piper's Electronics Division where the AutoNav auto-pilot is manufactured in a temporary structure.

The Lycoming powered 160-hp.

W. T. Piper, assisted by Mrs. Piper, sliced a 200-lb. birthday cake at the party. With them, left to right, are Governor Parris Bryant of Florida, Artist William Gillies and Evangelist Billy Graham. Ice cream was served with the cake to visitors.

Piper PA-28-160 Cherokee

Factory Data

Engine: 4-cyl. Lycoming O-320-B2B; 160 hp. at 2,700 rpm.

Price	$9,995
No. Seats	4
Construction	All Metal
Gross Wt., lbs.	2,200
Empty Wt., lbs.	1,195
Useful Load, lbs.	1,005
Useful Pct. of Gr. Wt., %	45.8
Std. Fuel Cap., gals.	36
Available Fuel Cap., gals.	50
Top Speed, mph.	132
Cr. Spd., 75% hp. @ 7,000 ft., mph.	132
Cr. Spd., 75% hp. @ sea level, mph.	123
Cr. Spd., 55% hp. @ 10,000 ft., mph.	120
Stall Speed, with flaps, mph.	56
Fuel Consumption—	
75% hp., gph.	9
55% hp., gph.	6.6
Cruising Range, 36-gal. Fuel—	
75% hp., miles-hrs.	492-4
55% hp., miles-hrs.	650-5.4
Cruising Range, 50-gal. Fuel—	
75% hp., miles-hrs.	675-5.5
55% hp., miles-hrs.	900-7.5
Rate of Climb, fpm.	680
Service Ceiling, ft.	15,000
Take-off Run, ft.	775
Landing Roll, ft.	550
Wing Area, sq. ft.	160
Wing Loading, lbs. sq. ft.	13.8
Power Loading, lbs. hp.	13.8
Wheel Base, ft.	6.2
Wheel Tread, ft.	10
Bagg. Capacity, lbs.	100

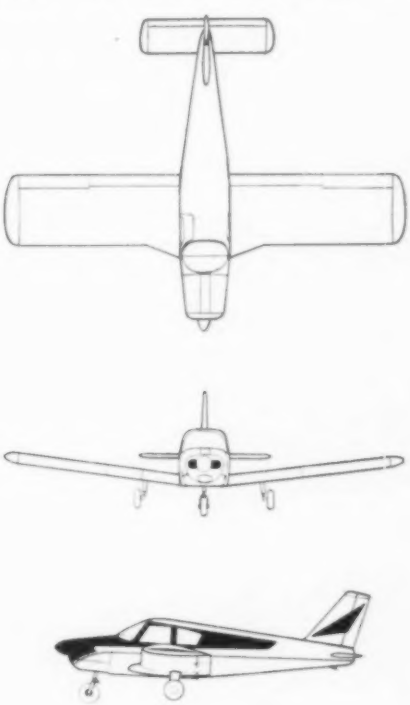
NOTE: Performance is for gross weight at sea level unless noted.

Here's a Cherokee flying over Piper Aircraft's $1,250,000 30-acre complex on the Vero Beach Municipal Airport. In the facility are the firm's new 123,400-sq. ft. manufacturing plant with its 7,000-sq. ft. office, research and development center and new electronics division. Production build-up will reach a rate of five Cherokees daily before the end of 1961. —(Piper Photo.)

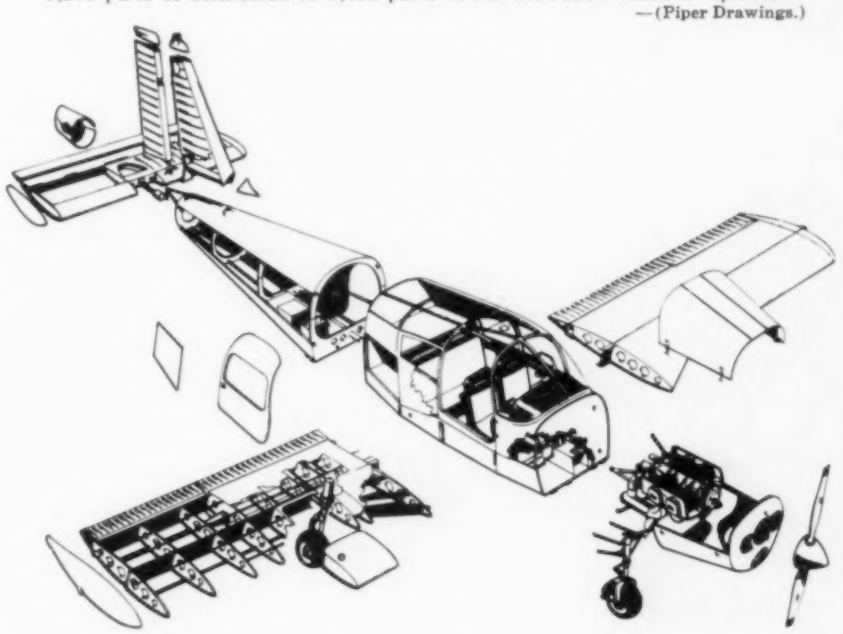
Cherokee is Piper's modern replacement for the well-known Tri-Pacer in the "under $10,000" price class. Listing at $9,995, the Cherokee boasts a cruising speed of 132 mph. at 75 per cent power at 7,000 feet altitude. Normal fuel load is 36 gallons for a cruising range of 4 hours or 492 miles. However, the two integral wing tanks actually hold 25 gallons for a total fuel load of 50 gallons. The normal 36 gallons are measured by filling only to the bottom of the filler neck. The extra 14 are available by filling all the way. Full tanks provide a 5.5-hour duration for 675 miles at 75 per cent power. At 55 per cent economy cruise, range is extended to 7.5 hours and 900 miles. This is figured at 10,000 feet, full fifty gallons of fuel and consumption of 6.6 gallons per hour.

Although built entirely of metal except for plastic nose, wing and empennage tips, the Tri-Pacer replacement actually uses far less parts than its tube-and-fabric predecessor—1,200 as against 1,600, indicating that Piper, under the guidance of designer Fred E. Weick, has gone in for a tremendous amount of production engineering, and from all appearances establishing a new high in this regard for lightplane manufacturing. The Cherokee, together with the two-place $4,995 Colt, would indicate that Piper intends to keep its dominant position in the low-cost field, while offering competitive designs in the higher-priced and higher performance twins in the Apache and Aztec.

Two other models of the Cherokee are under consideration — one with a 150-hp. engine and another mounting a 180-hp. engine. Flight data on the smaller engine is now being tabulated for possible certification.—G.E.H.



Three-view drawing at left and sketch below show details of new all-metal, 4-place, $9,995 Piper Cherokee. Span is 30 ft., length 23.3 ft. and height 7.3 ft. Cherokee uses 1,200 parts as contrasted to 1,600 parts in the Tri-Pacer which it replaces. —(Piper Drawings.)



CESSNA

announces an even greater

CESSNA 310F for 1961

with an added pair of windows sharpened nose contour slimmed tip-tanks long, flat nacelles new interior stylings and a host of other improvements that make the new Cessna 310F

the world's best all-around light twin

CESSNA FOR '61

310F

MONTE GREEN

● AIRLINE TERMINALS

● EXECUTIVEPORTS

How much extra management efficiency is there in 5400 extra Cessna executiveports? Listen carefully and you might hear the sound of a **timepiece** . . . ticking off talent . . . management talent . . . your talent. In sixty-five ticks you and your management talent could be four miles away from where you now sit . . . on a key management mission . . . aboard the world's best all around, light, twin-engine executive aircraft — the Cessna 310 F for '61.

For the next minute consider this appealing travel fact: You won't have to transfer, to stop and go . . . your big, luxurious 310 F takes you directly to your choice of 6,000 destinations — 9 out of 10 places an airline ticket can't! Work and plan while you travel — as far as half way across the nation — non-stop! Then convert the extra time you conserve into action. Leave your competitors behind! First step: See your Cessna dealer. NOW.

HOW MUCH EXTRA
ANCE CAN I EXPECT

...Twice as much, or more... aboard a new Cessna 310 F You'll recognize an unmistakable aura
command... an image of grace, power, and eagerness... a perfect compliment to your top-level tra
plans... in the 310 F for '61. Built lithe and lean for aerodynamically clean performance, its slim lines cond
a big command post cabin... offering full stretch-out freedom to four or even five "size forty-plus" occupants
in five optional seating arrangements! With true twin-engine safety, speed, and performance, the 31
challenges crowded calendars by providing a practical and proven travel plan for the man with more places

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HOW MUCH EXTRA
ANCE CAN I EXPECT

...Twice as much, or more... aboard a new Cessna 310 F You'll recognize an unmistakable aura command... an image of grace, power, and eagerness... a perfect compliment to your top-level tra plans... in the 310 F for '61. Built lithe and lean for aerodynamically clean performance, its slim lines conc a big command post cabin... offering full stretch-out freedom to four or even five "size forty-plus" occupants in five optional seating arrangements! With true twin-engine safety, speed, and performance, the 31 challenges crowded calendars by providing a practical and proven travel plan for the man with more places

OMMAND PERFORM-
ROM A CESSNA 310F?

be — more people to see than commercial airlines, the automobile, or railroad can possibly permit. It's even faster than most airline schedules — and more direct! Equip your company with a 310 F and you can save half — or more — of every travel hour you and your key men are now spending on surface and public transportation. Half hours that add up to extra day-dividends . . . for extra travel, extra planning, extra command performance!

Your Cessna dealer has a listing of blue-chip travel securities. Time dividends guaranteed.

TOP OF THE MARK IN PRIDE, PRESTIGE
INCOMPARABLE CESSNA COMFORTABILITY

Five versatile seating arrangements!

Excellence is a worthwhile dream . . . a dream realized in the spacious stateroom of the exciting 310 F for '61! As you look, feel . . . and enjoy the total experience of tasteful elegance aboard the world's best all 'round light, twin-engine executive aircraft, you'll sense the craftsmanship, the pride and the consummate skill employed in the selection and application of the materials which surround you. For these make a masterpiece. Step aboard and savor the subtle complements of color, of light, of texture, and tone. Tiny points of silver and gold mylar glitter amidst the weave of the richly textured wool carpeting . . . pointing up the burnished gold of the silken leathers artistically deployed on seat trim and bolsters. You'll enjoy, too, the quiet variations of tone on the "sun-sculptured" seating fabrics and the rich and restful effects of gold and silver threaded drapery and ceiling material caught in a background of fine basket-weave wool.

Throughout, you'll be pleasantly aware of the impeccable attention to detail . . . the soft polished sheen of metal fittings . . . the patient and precise hand stitching and assembly . . . the complete custom approach to the fashioning of a sophisticated environment for a **top man on the move!** As you travel you'll relax on super-soft cushioning . . . hand-formed over a basic seat construction designed to "back-up" hours and hours of continuous flight comfort! You'll have five distinctly different seating arrangement options . . . this year with new, individually adjustable seating features designed for greater individual comfort and freedom of adjustment!

All this* combined with whisper-quiet cabin sound control . . . Big, walk-in, walk-out cabin door; an all-weather, all-altitude "Blend-Temp" ventilating cooling and heating system; a "command console" instrument panel . . . and you have the top comfortability demanded for the best in command performance!

* Add, also, these incidental, but important, convenience items: Cigar lighter • ash receivers • optional drop-leaf, walnut writing desk • magazine racks • utility shelf • console and dome lights • and many others too numerous to mention!

"Eyes-on-the-Road," flight command instrument console puts everything within easy sight and reach! . . . features new, three-position starter mag switch, wrap-around, non-glare windshield.

TAJ CEDAR

Extra high, wide, and handsome cabin door provides natural walk-in, walk-out entrance and access, features triple-safety locks and "flight-snug" sealing.

LLANO BROWN

HOW MUCH?

There's a "how much" bonus everywhere you look . . . every-time you fly . . . aboard the 310 F . . . the world's best all around, light, twin-engine executive aircraft! **Twin 260-hp Continental engines,** with continuous flow fuel injection, give speeds up to 242 mph. **Flight-quiet muffler** design conspires with "quiet zone" cabin sound conditioning to preserve conference-room quietness. **Five versatile seating arrange-ments** permit you to pick and choose three magnificent color selections from five distinctively different interior seating plans. **Two-speed electrical auxiliary fuel pumps** installed in each tip tank assure maximum safety. **Optional auto pilot** gives you new mastery of the air . . . makes long cross-country trips a pleasure! **Electrically operated split-type,** dual-purpose flaps offer high lift for shorter, higher performance take-offs and high drag for shorter, softer ap-proaches into small fields. **Full flight/sweep, all-weather vision . . . spacious baggage compartment . . . extra wide cabin door** . . . all this and the "two of everything that counts" concept that provides true twin-engine safety for the 310 F . . . also provides you with truly twice the buy! How much to buy and fly? Ask your Cessna dealer for a VPM (Value Per Mile) analysis. There's no obligation.

In travel there's an ever-pre
where does **transportation** en
convenience, and fun begin? B
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move find themselves . . . lies
the complete line of Cessna's f
new opportunities to meet the
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world — and to enjoy relaxing ti
your Cessna dealer today, exe
to match the mission you have
world's most complete line of
for every performance level, e
Then sit back and enjoy the d
work and pleasure as you travel
your need . . . name your Cessna

150

172

SKYHAWK

175

SKYLARK

185

182

SKYLANE

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310F

n ever-present problem...
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begin? Best answer to this,
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es...lies somewhere along
Cessna's for '61...12 great
meet the demanding mis-
ghly competitive business
relaxing time en route! Visit
today, exercise your option
you have in mind with the
te line of business aircraft
ce level, every price range.
njoy the difference between
you travel! In brief, "What's
our Cessna!"

SKYLARK

180

310F

SKYHOOK

12 CESSNAS FOR '61

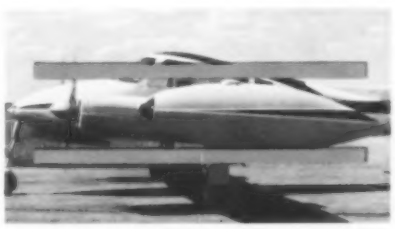
Two hundred pound baggage capacity of the 310 F provides full airline luggage weight allowance for each of five passengers. Spacious compartment accommodates full-size luggage — easily loaded from outside through an oversize door that automatically stays wide open when loading. Baggage compartment is fully lined of finest leathers to protect luggage from slightest mars or scratches.

The flight/sweep nacelles of the 310 F are mounted parallel with the dihedral of the wing for minimum frontage to provide aerodynamic cleanness that minimizes drag, optimizes efficiency and speed, snugly houses the engines and directs cooling air-flow around cylinders in uniform and even patterns. Quick removable nacelle cowl and nose cap saves you time and expense during routine servicing.

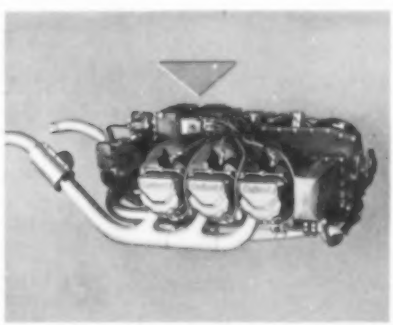
A full set of airliner precision-type trim controls for rudder, and elevator, is located within easy reach of the pilot. The 310 F trims out beautifully for relaxed cruising flight — an important and valuable feature to the executive owner-pilot. Positive position indicators are built into each trim system for fast identification.

The Cessna 310 F pilot enjoys the pleasure and safety of wider panoramic visibility in all directions than that available in many larger airliners. Downslope taper of the nose also provides full vision ahead and to the sides in taxiing or parking. Passengers share the sweeping penthouse outlook in flight, enlarged for '61 by additional generous-sized rear windows.

Whether operating in and from the busiest metropolitan airports, or small out-of-the-beaten-path fields, nimble and precise ground handling is positive and time-conserving. The 310 F steerable nose wheel enables easy completion of sharp pivotal turns — Powerful taxi light automatically turns with the nose gear to show the way ahead during after-dark operation.



New for '61 is the Jet Age 310 F styling of the fuselage nose cap, "needle nose" propeller spinners and wing-tip fuel tanks. Sharper in appearance, they also afford an added margin of aerodynamic cleanness and efficiency. Location of fuel supply at wing tips affords an extra margin of safety; and tanks serve functionally to cause lift equivalent to 3½ added feet of wing area.

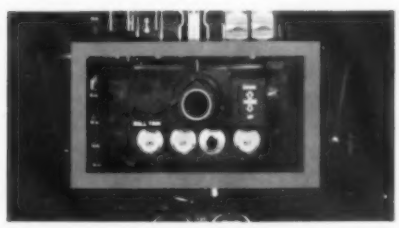


Either one of the new 310 F's 260-hp Continental IO-470-D six-cylinder engines can sustain the airplane in flight with full gross load at 8,400 feet absolute single-engine altitude; or with one engine inoperative, can climb at the rate of 440 feet per minute. These famous engines are now building new records for dependability and performance based on their multi-million miles of outstanding service. The "D" series for '61 in the 310 F, incorporates Scintilla retard-type impulse dual magnetos coupled with fuel injection that provide almost instantaneous starting. Their positive fuel-injection system, backstopped by intake air heating when required, eliminates even the remotest possibility of engine icing.

Quick-acting, split-type, dual-purpose, electrically operated flaps of extra large size boost lift and climb angle over obstacles; impose controlled drag for sharp, safe down-slant approaches into small-space landing areas. The use of these flaps gives the 310 F pilot a measure of maneuverability superior to that of many small, single-engine aircraft.

Heating and ventilation, more than adequate for a hotel suite, guarantees all-weather comfort to 310 F passengers from the new "Blend-Temp" fully controllable system. Alaskan owners enjoy Miami climate with heated fresh air from a 35,000-BTU gasoline heater. The system includes big-capacity windshield defroster, and a new on-the-ground warm air heat control. A ventilator exhausts stale air in flight.

All-weather, all-season utility of the 310 F is increased with optional installation of propeller anti-icing system, and wing and horizontal stabilizer de-icers. Fully service-proved, these systems provide extra margins of safety for flying through, rather than around weather that presents potential ice build-up in flight.



A compact, light-weight, full-maneuvering, and stabilizing automatic flight control system is available as optional equipment on the 310 F! Operating on all three axes — roll (aileron), pitch (elevator), and yaw (rudder), it will perform any safe maneuver in turbulent or still air — automatically and with unequalled precision. A single flick of the switch and your 310 F is under complete stabilized control, accurately held on any course you select.

PERFORMANCE / SPECIFICATIONS

	4,830 lbs.	4,500 lbs.	4,200 lbs.
GROSS WEIGHT			
SPEED: BEST POWER MIXTURE			
Maximum – Sea Level	242 mph	243 mph	245 mph
Maximum Recommended Cruise, 70% Power at 8,000 ft.	220 mph	222 mph	225 mph
RANGE: NORMAL LEAN MIXTURE			
Maximum Recommended Cruise, 70% Power at 8,000 ft.	825 miles	840 miles	850 miles
100 Gallons, No Reserve	3.8 hours/218 mph	3.8 hours/221 mph	3.8 hours/224 mph
Maximum Recommended Cruise, 70% Power at 8,000 ft.	1,070 miles	1,085 miles	1,100 miles
130 Gallons, No Reserve	4.9 hours/218 mph	4.9 hours/221 mph	4.9 hours/224 mph
Maximum Range at 10,000 ft.	1,025 miles	1,070 miles	1,100 miles
100 Gallons, No Reserve	6.1 hours/167 mph	6.5 hours/164 mph	6.8 hours/161 mph
Maximum Range at 10,000 ft.	1,340 miles	1,390 miles	1,440 miles
130 Gallons, No Reserve	8.0 hours/167 mph	8.5 hours/164 mph	8.9 hours/161 mph
RATE OF CLIMB AT SEA LEVEL:			
Twin Engine	1,800 fpm	2,000 fpm	2,200 fpm
Single Engine	440 fpm	525 fpm	615 fpm
SERVICE CEILING:			
Twin Engine	21,300 feet	22,500 feet	23,500 feet
Single Engine	7,700 feet	9,200 feet	10,900 feet
TAKE-OFF:			
Ground Run	800 feet	680 feet	590 feet
Total Distance Over 50-Foot Obstacle	1,395 feet	1,250 feet	1,130 feet
LANDING:			
Landing Roll	620 feet	610 feet	575 feet
Total Distance Over 50-Foot Obstacle	1,720 feet	1,690 feet	1,595 feet
EMPTY WEGIHT (Approximate)	3,040 lbs.	3,040 lbs.	3,040 lbs.
BAGGAGE	200 lbs.	200 lbs.	200 lbs.
WING LOADING: Pounds Per Square Foot	27.6 lbs.	25.7 lbs.	24.0 lbs.
POWER LOADING: Pounds/HP	9.3 lbs.	8.6 lbs.	8.1 lbs.
FUEL CAPACITY: Total			
Standard	102 gals.	102 gals.	102 gals.
Optional	133 gals.	133 gals.	133 gals.
OIL CAPACITY: Total	6 gals.	6 gals.	6 gals.
POWER: Two Continental 6-Cylinder, Fuel Injection IO-470-D Engines, 260 Rated HP at 2,625 RPM			
PROPELLER: Constant Speed, Full-Feathering			
WING SPAN	36 feet	36 feet	36 feet
WING AREA	175 sq. ft.	175 sq. ft.	175 sq. ft.
LENGTH	29.5 feet	29.5 feet	29.5 feet
HEIGHT	9.93 feet	9.93 feet	9.93 feet
	4,830 lbs. take-off allows for 5 people, full gas and oil load, plus 283 lbs. baggage and optional equipment.	4,500 lbs. take-off allows for 4 people, full gas and oil load, plus 123 lbs. baggage and optional equipment.	4,200 lbs. take-off allows for 2 people, full gas and oil load, plus 163 lbs. baggage and optional equipment.

NOTE: Single Engine Service Ceiling increases over 425 feet each 30 minutes of flight.

STANDARD EQUIPMENT

Altimeter, Sensitive
Ammeter
Arm Rests, (Six)
Ash Trays, (Four)
Attachment Provisions (Cargo Rings and Shoulder Harness)
Batteries, (Two) 12 Volt
Brake, Parking
Brakes, Hydraulic Toe-Operated
Carpet, (Wall to Wall)
Circuit Breakers, Electrical
Clock
Compass, Magnetic (Variable Intensity Light Control)
Control, Fuel Strainer Drain Remote
Control, Mixture
Curtains, Rear Window
Cushions, "Polycloud" Seat
Defroster, Windshield
Detector, Navigation Light
Door, Baggage Compartment Outside
Engine, Fuel Injection
Flaps, Wing (Electric)
Flasher Unit, Navigation Lights
Floorboards, Removable
Fuel System, Injection Type (Dual)
Fuel Tanks, Wing Tip
Fuel Valves, Quick Drain (Four)
Gage, Fuel Pressure (Dual)
Gage, Outside Air Temperature (Electric)
Gage, Suction
Gage Units, Engine (Oil Temperature, Oil Pressure, and Cylinder Head Temperature Gages)
Gages, Manifold Pressure (Dual)
Generators, 25 Amp. 24 Volt
Gyros, Horizon and Directional New (One-Year Warranty — Includes Vacuum System)
Headphone Jacks
Heating System, Stall Warning Transmitter and Pitot
Heating System, Stewart-Warner Cabin (Thermostatically Controlled)
Heating System, Engine Induction
Hook, Clothes Hanger
Ignition System, Dual Operated
Indicator, Airspeed
Indicator, Fuel Quantity (Dual)
Indicator, Landing Gear Warning Audible
Indicator, Rate-of-Climb
Indicator, Stall Warning Audible
Indicator, Turn and Bank
Indicator, Wing Flaps Position
Instrument Panel, Shock-Mounted
Landing Gear, Retractable (Electrical with Auxiliary Manual Extension)
Light, Baggage Compartment
Light, Fuel Selector Handles (Variable Intensity)
Light, Landing (Retractable, Left Wing)
Light, Turn and Bank Indicator Test (With Dual Circuit for Heater Overheat Indicator)
Lighters, Cigarette (Front and Back)
Lights, Dome
Lights, Instrument Panel White and Red Flood (Variable Intensity)
Lights, Instrument Post-Type Red (3 Zones, Variable Intensity)
Lights, Landing Gear Position
Lights, Navigation
Lock, Baggage Door
Lock, Cabin Door
Lock, Aileron and Elevator Controls
Lock, Engine Controls Friction
Map Compartment
Microphone Jacks
Mufflers, Engine Exhaust
Nose Gear, Steerable
Oil Coolers, Non-Congealing
Paint Scheme, All-Over
Pockets, Map and Storage
Priming System, Engine
Propellers, Constant Speed Full-Feathering
Pumps, Engine-Driven Fuel (Two)
Pumps, Engine-Driven Vacuum (Two)
Pumps, Electric Auxiliary Fuel (Two)
Regulators, Voltage (25-Amp., 24-Volt)
Rings, Airplane Tie-Down
Seat, Rear (Adjustable Back)
Seat Springs, No-Sag
Seats, Adjustable Fore and Aft and Reclining Front
Shelf, Utility
Shielding, Engine Ignition
Sound Proofing (Super)
Space, Optional Instruments
Speaker, Cabin Radio
Spinners, Propeller
Starters, Engine (With Five-Position Rotary Switch)
Step, Retractable Cabin
Strainers, Fuel (With Quick Drain)
Straps, Assist
Straps, Baggage Tie-Down
Sun Visors
Tachometer, (Dual Electric)
Test Valve, Vacuum
Tow Bar, Airplane
Trim System, Aileron, Elevators, and Rudder
Vacuum System, Engine-Driven Pump Type (Dual)
Ventilators, Adjustable Cabin Air
Window, Pilot's Hinged
Windows, Double Rear
Windows, Tinted Side

Standard equipment and specifications subject to change without notice

FREE VPM ANALYSIS— With the answers to six simple questions, your Cessna dealer can provide a Value Per Mile Analysis for your company. You can actually see **how little** it costs to travel farther and faster in your choice of 12 Cessna's for '61 and **how much** extra power, performance, and progress you can **expect and get.** Ask your Cessna Dealer for a free VPM Analysis, now. No obligation.

FINANCING — Your choice of 12 new Cessna's for '61 are as easy to **buy** as they are to fly!...for Cessna dealers offer a convenient, practical plan for financing . . . a program designed to provide fast, simple, pre-planned financing service. See your Cessna dealer for the details, and terms, of a financing plan which will put you out front, keep you out front— to stay . . . in a Cessna for '61. Lease plans are also available.

RENT-A-PLANE — If you want to test the profit-proven benefits of a Cessna before you buy . . . if you're looking for the link to make an important travel connection . . . or if you simply want to fly for fun . . . remember, you can rent a plane just like you rent a car! Fly yourself or with pilot provided. Call your Cessna dealer for complete details.

COOPERATIVE OWNERSHIP — If your individual needs do not presently justify sole ownership of the Cessna of your choice, ask your Cessna dealer about group ownership. He'll give you the full details of the popular associate plan for cooperative airplane ownership . . . a practical plan which permits small groups to pool their private air travel budgets in order to economically participate in the progress . . . and fun of flying a Cessna for '61!

LEARN TO FLY AS YOU TRAVEL — Your Cessna dealer has a flight training plan to fit your every-day schedule. Most popular is the "Learn-to-fly-as-you-travel" plan. You can actually take "on-the-job" flight training during business trips! Your Cessna dealer can also arrange an "after-five" and weekend schedule of training, too. And when you solo, your Cessna dealer will present you with a "Cessna Solo Trophy," a clever and handsome piece you'll be proud to put on permanent display in your trophy case, at home or in the office!

"GOLDEN RULE" WORLD-WIDE SALES AND SERVICE — Wherever you go you'll be only minutes away from the Cessna "Golden Rule" service. When you see the Cessna dealer's red and blue pennant shield of service . . . it's a sure sign that your service needs will be handled expertly, economically, and efficiently by factory-trained service technicians — and that you'll get prompt, courteous attention. Across the nation . . . around the world . . . look for the red and blue pennants, the sign of Cessna Golden Rule Service!

FLIGHT/SWEEP STYLED COLOR SELECTIONS

6: PATINA IVORY
VERDE GREEN
HARVEST TAN

3: PATINA IVORY
SUNSET ORANGE
COPPER-GLO BROWN

2: PATINA IVORY
MATADOR RED
SANDSTONE BEIGE

7: PATINA IVORY
SATIN GRAY
SUNBEAM YELLOW

1: PATINA IVORY
COPPER-GLO BROWN
HARVEST TAN

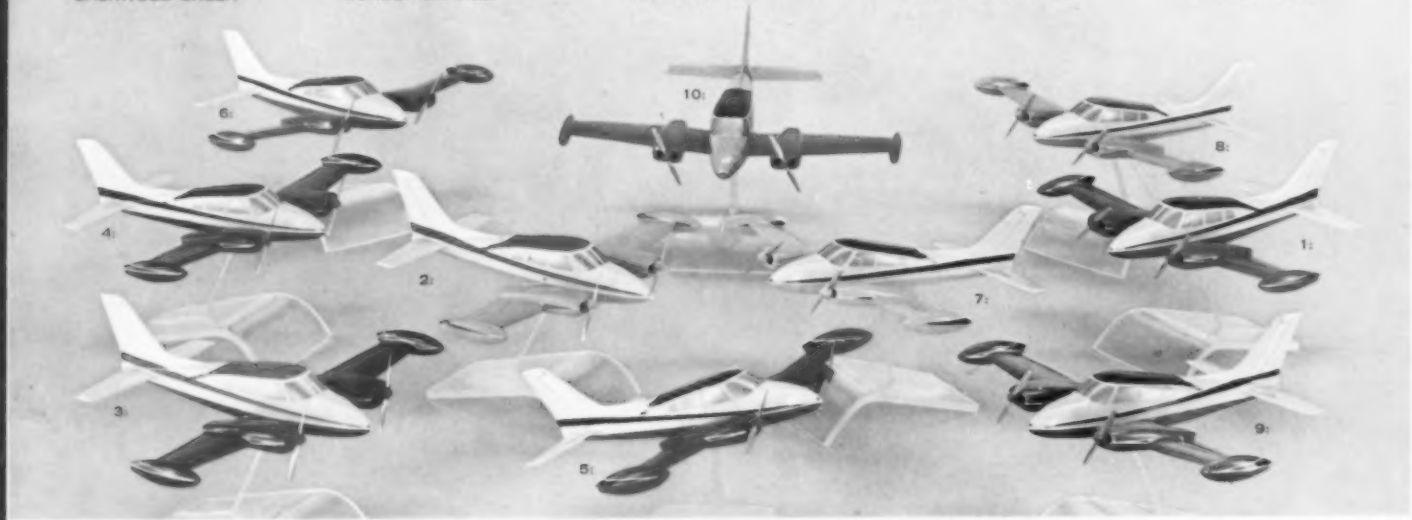
4: PATINA IVORY
VERDE GREEN
SHERWOOD GREEN

10: SANDSTONE BEIGE
COPPER-GLO BROWN
SUNSET ORANGE

5: PATINA IVORY
SATIN GRAY
MATADOR RED

8: PATINA IVORY
RADIANT BLUE
SANDSTONE BEIGE

9: FROST BLUE
TWILIGHT BLUE
RADIANT BLUE



WHATEVER YOUR TRAVEL NEED...SEE YOUR CESSNA DEALER TODAY

Cessna®
AIRCRAFT COMPANY
WICHITA / KANSAS

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AUTHORIZED
Cessna
SERVICE

The Cessna dealer displaying the factory authorized service sign represents a symbol for friendliness, hospitality and expert Cessna service featuring

factory-trained mechanics . . .

factory-approved equipment . . .

and a complete stock of genuine factory parts.

Make the most of your Cessna's usefulness by depending on the Authorized Cessna Service Centers listed for assurance that your airplane is always ready to go, always in top condition for reliability, performance and comfort.

Your Cessna is always ready to go

when you depend on the factory authorized Cessna Service Centers listed below.

Aircraft Sales Company
Gregg County Airport
Longview, Texas
Meacham Field
Fort Worth, Texas

The Air-Oasis Company
3353 Lakewood Boulevard
Long Beach 8, Calif.

Airnews, Inc.
260 E. Terminal Drive
San Antonio, Texas

Champ's Aviation, Inc.
Municipal Airport
El Paso and Lubbock, Texas

Clinton Aviation Company
Stapleton Airfield
Denver, Colorado

Coastal Aviation, Inc.
4906 Tampa Bay Blvd.
Tampa International Airport
Tampa 3, Florida

Cruse Aviation, Inc.
International Airport
Houston, Texas

Executive Aircaft Company
701 Perimeter Road
Kansas City, Missouri

Lynch Flying Service, Inc.
Logan Field Box 1575
Billings, Montana

Macon Air Service, Inc.
P. O. Box 2036
Macon, Ga.

Ragsdale Aviation, Inc.
Municipal Airport
Austin, Texas

Southwestern Skyways, Inc.
Municipal Airport
Santa Fe, New Mexico
and Ogden, Utah

Kenneth Starnes Aviation Service
Adams Field
Little Rock, Arkansas

Sunny South Aircraft Service, Inc.
Broward International Airport
Fort Lauderdale, Florida

Walston Aviation, Inc.
Civic Memorial Airport
East Alton, Illinois

Wings, Inc.
Wings Field
Philadelphia 18, Pa.

Yingling Aircraft, Inc.
Municipal Airport
Wichita, Kansas

This is the 3-place Morane-Saulnier 880 Rallye which Coleton Aircraft of Deerfield, Illinois, will import from France and market in the U. S. in 90, 100 and 145-hp. versions, the latter seating 4 people. Production model will have swept tail. Cruising speeds will range from 106 to 130 mph., with 500-700-mile range.

U. S. Tour And Sales For French Lightplane

A FRENCH-DESIGNED and manufactured lightplane featuring high-lift devices and simplified all-metal construction is being imported into the United States for marketing by the Coleton Aircraft Corporation of Deerfield, Illinois and Muskegon, Michigan. It is the 3-4-seat Rallye, developed by Morane-Saulnier of Paris, producers of the 4-place MS-760 twin-jet, which is also marketed in the U. S.

P. H. Coleman, president of the Michigan firm, has announced he will market three versions of the Rallye — the 90-hp. 880, the 100-hp. 880 and a 145-hp. 885, all powered with Continental engines. Coleman said his is a new company, organized especially to market the Rallye series. His announcement was from temporary offices at 1215 Parkside Drive, Deerfield, Illinois, and he said the company has acquired 50,000 sq. ft. of factory and office space at Muskegon, Michigan, on the Muskegon County Airport, where the imported aircraft will be assembled. Coleman said a division of his firm, Scot-Air, Inc., will conduct a complete flight operation at the airport, along with a parts depot. Coleman is a resident of Glencoe, Illinois, and president of Midwest Aircraft Sales, which specializes in acquiring and ferrying used light twin-engine aircraft for aircraft buyers abroad. With him in the Coleton Aircraft Corp., are W. J. Smelten of Deerfield, K. C. Davies of River Forest, Illinois, and M. H. Coleman of Glencoe.

Coleman expected to receive the prototype Rallye 880 in February and to make a 60-90-day demonstration tour of the U. S. immediately. A production-model 885 Rallye is scheduled to join the prototype on the tour. FAA certification of the Rallye is expected late in February with French and U. S. certification expected concurrently. Both 880 and 885 versions were designed for certification under Part 03 of the U. S. Civil Air Regulations, to be licensed in the "utility" category at full gross weight and in the "aerobatic" category with two occupants only.

Production models will incorporate several design improvements and changes from the prototype which will tour the U. S. According to Coleman, the production model changes include: Cabin 7 inches longer and 2 inches wider; wheel controls instead of sticks; additional soundproofing; adjustable instead of fixed front seats; swept tail to replace squarish vertical fin; new canopy for more headroom; landing gear speed fairings as standard equipment, and use of McCauley all-metal prop as standard.

In France, Morane-Saulnier has flown the prototype over 1,000 hrs., and is scheduled to begin quantity production in April. On a sales tour of Europe last summer, the prototype was widely demonstrated and deposits were received with orders for 150 airplanes. The factory has scheduled an initial

Coleton Rallye 880-885

Data From Coleton Aircraft Corp.

	Model 880-90	Model 880-100	Model 885-145
Price	$5,750	$5,795	$7,995
Cont'l. Eng. Model	C-90-14F	O-200-A	O-320-A
Horsepower	90	100	145
No. Seats	3	3	4
Gross Wt., lbs.	1,708	1,708	2,200*
Empty Wt., lbs.	1,003	1,003	1,250*
Useful Load, lbs.	705	705	905*
Usable Fuel Capacity, gals.	26	26	44
Top Speed, mph.	121	128	143
Cr. Speed, mph.	106	116	130
Landing Speed, mph.	43	43	46
Range, miles	500	515	700
Rate of Climb, fpm.	512	591	1,013
Take-off Run, ft.	722	591	394
Landing Roll, ft.	295	295	328
Span, ft.	31.5	31.5	31.5
Length, ft.	23	23	23
Height, ft.	9	9	9
Wing Area, sq. ft.	132.5	132.5	132.5
Main Gear Tread, ft.	7	7	7
Cabin Width, ft.	4	4	4

*Estimated.

Stall-proof and spin-proof, Rallye has full-span spring-loaded leading-edge slats which automatically open at slow speeds and high angles of attack to retain full control. Note large flaps and ailerons.

production quantity of 250 airplanes. It is reported that simplified construction enables Morane-Saulnier to produce the Rallye with 300 to 350 man-hours per airframe. This simplification includes the use of thick, open U-section trailing edges.

The fat-looking little low-wing tricycle incorporates unusual slotted ailerons, wide-span slotted flaps and full-span automatic leading-edge slats with a thick high-lift wing. Automatic extension of the leading-edge slat depends on several variables, including bank and acceleration. They are open on take-off and in the climb-out, automatically closing as the nose is lowered and speed is picked up for cruising. In the approach, they extend at about 50 mph., "grabbing" the air at high angles of attack for lift at slow speeds. The Rallye design makes the airplane spin-proof and stall-proof — at about 47 mph., instead of stalling, it just sinks at about 800 fpm. with full control.

The high-lift devices give the Rallye impressive short-field capabilities, including a take-off run of less than 800 ft. and a landing roll of about 300 ft. for the 90-hp. 880. The large flap is manually operated. The 90-hp. prototype cruises 106 mph. on about 5 gals. of fuel hourly, its 26-gal. supply giving it about 5 hrs. and 500 miles of range.

Coleman said he is appointing dealers at the present time and orders for airplanes are being accepted with deposits of $600 to $800 (about 10% of the purchase price).

Fat little Rallye has sliding canopy, 48-inch cabin width and 7-ft. cabin length. Note leading-edge slat is extended in front of right wingtip. In flight view above, slat is held in retracted position by air velocity.

Pressurized On Mark Marksman has 7,500-ft. cabin pressure while cruising at 20,000 ft. and is marketed in three versions ranging from $247,430 to $361,492 in price, from 325 to 365 mph. in cruising speed and from 1,200 to 2,500 miles in range.

First Pressurized On Mark Marksman

A NEW pressurized-cabin Marksman version of On Mark Engineering Company's Douglas B-26 conversion received a supplemental type certificate (STC) on January 23 from the Federal Aviation Agency. First delivery of a pressurized Marksman is going to Wheaton Glass of Millville, New Jersey, for which Cal Readinger is chief pilot. This firm has been operating a de Havilland Dove.

The Wheaton Glass Marksman received a Horton & Horton custom interior at Fort Worth, where FLIGHT MAGAZINE obtained some of the airplane's details from Jim Siberell, chief engineer and test pilot for On Mark. In addition to the Wheaton Glass delivery, there were five more Marksmen in the On Mark shop at Van Nuys, California, last month. About 45 unpressurized On Mark B-26's are already flying.

The pressurized version has a completely new fuselage, with new steel ring-beam replacing aft wing spar in the cabin for additional cabin space. The front wing spar is retained but the new fuselage provides a view from the cabin across the top of the front spar through the windshield and a large crawl (or kneeling) space for access between cockpit and the cabin. Cabin height at the stairdoor is 6 ft. 1 inch. The cabin seats 8 persons. DC-7-type double-pane windows are used. Cabin and cockpit are pressurized for a 7,500-ft. altitude while cruising at 20,000 ft. and are air

(Continued on page 60)

These views show Horton & Horton custom interior of Wheaton Glass Marksman, first pressurized On Mark conversion. Bulkhead below is at aft ring spar station. Note how curtain drape divides long divan.

Looking forward in Marksman, note opening above front spar for visibility from cabin through cockpit, with crawl space on starboard side.

—(Horton & Horton Photos.)

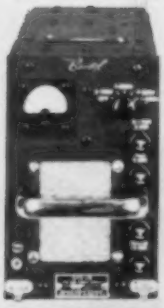
"Wouldn't be without Bendix All-weather RADAR"

says Don Corey, Chief Pilot, Bundy Tubing Company

CON-1L-4 Control Unit

ANT-1G Antenna

RDR-1D Transmitter Receiver



SYN-1B Synchronizer Power Supply

PPI-1E Pilot's Indicator

Beech Super 18 has "bright display" indicator plus stabilized antenna

Bendix® RDR-1D Airborne Weather Radar provides the finest in "weather avoidance" information for Bundy Tubing's business aircraft flights. Pilot Corey gets an uninterrupted "picture" because the Bendix gyro-controlled, stabilized antenna provides continuous, full range display, regardless of the plane's maneuvering or altitude changes.

The PPI-1E Bright Display Indicator (several hundred times brighter than conventional scopes) provides longer viewing time and a higher contrast picture, scouting weather up to 150 miles ahead.

With all its accuracy and dependability, the Bendix RDR-1D is compact and lightweight. And there are many other solid reasons why it is the choice of more and more business fleets every day. Over 2000 commercial and private aircraft now fly with the protection of Bendix weather radar. Make it *your* choice, too. For details, see your Bendix dealer. Or write . . .

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Pressurized Lockheed Super 26 has new fuselage, new nose and new dorsal fin. Span is 70 ft., length 53 ft. 4 ins., and height 18 ft.

First Pressurized Lockheed Super 26

LOCKHEED Aircraft Service at Ontario, California, has been readying for delivery the prototype of its pressurized B-26 conversion for Mesta Machine Company of Pittsburgh, Pennsylvania. The Super 26 was granted a supplemental type certificate (STC) by the Federal Aviation Agency on September 22, 1960.

Cabin and cockpit are pressurized to maintain an 8,000-ft. cabin altitude while cruising at 20,000 ft. For the Super 26, Lockheed Aircraft Service discarded the military fuselage and replaced it with a completely new fuselage with enlarged cabin structure measuring 19.5 ft. long, 6 ft. high and 4 ft. 8 inches wide. The rear spar section which originally boxed off the fuselage was replaced with a forged steel ring to which wing attachments were fastened. This provides an unobstructed cabin area, aft of the front spar, which was retained, and the enlarged cabin seats 6 to 9 passengers while providing lavatory, galley and storage cabinets.

An airstair door makes cabin access easy and convenient. Lockheed also manufactured a new fiberglass nose compartment containing electronics and main baggage storage, installed an auxiliary baggage compartment to the rear of the cabin with outside door and added an enlarged dorsal fin for improved lateral stability.

View below shows Lockheed Super 26's airstair door and auxiliary baggage door behind cabin. Interior view at left looks forward, with wardrobe at right and lavatory at left. Two aft-facing and two forward-facing chairs are reclinable. The air-conditioned and sound-insulated cabin is 19.5 ft. long, 6 ft. high and 52 inches wide.

—(Lockheed Aircraft Service Photos.)

PIPER Comanche

world's most imitated business airplane... still not equalled for all-around excellence

The Comanche's striking beauty, with its clean flowing lines from prop spinner to much imitated swept rudder, has set the pace in business aircraft styling the world over. *

But while others have tried to copy Comanche styling, it has been more difficult to match the Comanche's perfect combination of the best features you want in a fine airplane—speed, comfort, economy, stamina, reliability, flying ease.

Result? Since its introduction, more Comanches have been sold every year than any other retractable geared airplane—proof that the flying public prefers the Comanche's bigger, roomier, more comfortable cabin, bigger baggage compartment, big useful load, as well as its reliability and fine performance.

Now for '61 the Comanche is even finer, with many new features – **NEW** 90-gallon optional fuel capacity for Comanche 250 . . . **NEW** instrument panel with center-mounted radios . . . **NEW** cabin heating and cooling systems . . . **NEW** exclusive dual braking system with toe brakes and hand brake standard . . . **NEW** optional Piper AltiMatic automatic pilot with course and altitude selector, heading lock and altitude hold . . . **NEW** Piper AutoNav—optional, low-cost radio compass.

The Comanche is offered with the 180 hp Lycoming engine for maximum economy, or the 250 hp Lycoming for top performance. See, fly, compare the newest, finest Comanches at your Piper dealer's. Check features, check equipment, check prices and be surprised at how much less the Comanche costs. See your Piper dealer or write for new 1961 Comanche brochure, Dept. F-2.

PIPER AIRCRAFT CORPORATION
Lock Haven, Pa.

***EVEN THE FRENCH SAY Oo la la**

Les Ailes, *France's authoritative aviation journal, describing a new European prototype which appears to be an exact replica of the Comanche, commented that the designers had picked the right model to copy with these words: "The Comanche is without argument the most elegant of all airplanes of this class manufactured in the U.S.A." Thank you, Les Ailes!*

Here's first Aircoupe to be rolled off the production line at Carlsbad, N. Mex., with part of large crowd at celebration of the event.

Aircoupe Production In New Mexico

OVER 5,000 visitors were on hand recently when the first Aircoupe was completed in a new production facility at Carlsbad, New Mexico, by the Aircoupe Division of Air Products, Inc. It was rolled out the door within 60 days after the production equipment was moved to Carlsbad from Colorado.

James C. Hayes, president of Air Products, said output of the 2-place Aircoupe derivative of the original Ercoupe will be progressively increased until a rate of production of 500 units per year is reached late in 1961.

The $7,450 all-metal Aircoupe is powered by a 90-hp. C-90-12F Continental engine, cruises 120 mph., stalls at 45 mph., has 1,450-lb. gross weight, 900-lb. empty weight and 550-lb. useful load, 24-gal. fuel capacity, 500-mile range and takes off and lands at sea level within 600 ft.

Pretty Carolyn Moore, who is Miss New Mexico, cut the ribbon unveiling the first Carlsbad Aircoupe. Plant will turn out 150 Aircoupes this year but production rate will reach a rate of 500 annually at end of 1961.

MOTOROLA TRANSISTORIZED ADF-T-12

the world's most experienced lightweight ADF... the modern, miniaturized version of the famous ADF-12's that have logged more hours than all other automatic direction finders combined. This new system was introduced last fall and is the result of over 20 years experience of designing radio direction finders plus Motorola's leadership in transistorized communications systems. Sixty percent lighter, seventy percent smaller and even more reliable than its famous predecessors, the ADF-T-12 has total solid state circuitry and conservatively rated components. The receiver is complete and self-contained, weighs only five pounds and fits easily into the standard ADF panel opening.

MORE HOURS

The full-size (3") azimuth indicator provides maximum readability and accuracy and may be mounted anywhere on the panel. And the fixed loop antenna is the lightest, smallest, thinnest ADF antenna in the world... the only true goniometer-type loop in its price range. More proven hours of performance. More reliability. More reasons why you should see and test-fly the ADF-T-12 at your Motorola Dealer now.

MOTOROLA *Aviation Electronics Inc.* A SUBSIDIARY OF MOTOROLA INC.

10916 West Washington Boulevard, Culver City, California

Kaman H-43B Huskie is shown at right carrying fire suppression kit. In photo above, note long tailpipe for 825-hp. turbine engine, "bear paw" landing gear for soft ground.
—(Kaman Aircraft Photos.)

Air Rescue Copters For Air Force Bases

KAMAN Aircraft Corporation is delivering a fleet of 116 turbine-powered H-43B Huskie helicopters to the Air Force for use primarily in local air base crash-rescue missions and the Air Force has also purchased 18 H-43A piston-powered Huskies for the same mission. The turbine-powered B model was developed to meet a basic requirement for an aircraft capable of responding rapidly to a crash emergency, fly over ground obstacles and deliver firemen and fire-rescue equipment in time to save the lives of crewmen trapped in burning aircraft.

As seen in the photos on this page, the Huskie carries by cargo hook a fire suppression kit consisting of a foam and water "bottle," nitrogen pressure bottle and hose. Needing no warmup, its 825-hp. Lycoming T-43 turbine enables the Huskie to be airborne within 30 seconds after a crash alert and in another 30 seconds the fire kit is attached. Crossing streams, marshes, fences, woods or other obstacles, it drops the kit at the crash scene and then lands its two aircrew-firemen. While they unreel the hose and activate the foam bottle, the Huskie takes off and hovers in position to blow flames and heat away from the firemen as they rescue occupants of the downed aircraft. It then lands and carries four litter patients with a medical attendant to the base hospital. Because its twin-meshing rotors eliminate the need for a tail-rotor, it can land in high weeds or brush.

Ten troops can be carried in rear-loaded cabin (left). In demonstration, below, Huskie has landed firemen and foam kit at crash and is hovering so that rotor downwash blows flames and heat away from rescuers as they extricate dummies representing crash victims in wreckage. —(Kaman Aircraft Photos.)

Easy way to keep leading edges ice-free

Spray GLIDAIR 17-A Ice Repellent on leading edges, antennae, struts and props before taking off during marginal weather. The special silicone formula of GLIDAIR 17-A prevents ice formation because it polishes easily to a pore-free, hard, glossy surface . . . keeps you safe and worry-free.

Use GLIDAIR 17-A on landing gear and wheel wells, too. It guards against ice buildup from moisture picked up on wet, slushy runways. And GLIDAIR 17-A lubricates moving parts, protects them from corrosive salt and chemicals.

Keep several spray cans of GLIDAIR 17-A Ice Repellent handy for foul weather flight. Available through most private operators, or write for the name of your nearest distributor.

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A D M A

Ask about other superior GLIDAIR products: New G.V.A. fast drying, high gloss metal finish; GLIDAIR Super Renovite Plus high lustre, long lasting cleaner-polish; GLIDAIR Windshield Cleaner for restoring plastic windows and windshields.

LOGGING THE 310F

(Continued from page 23)

in our demonstrator airplane. Total cost of these components was more than half the $62,500 list price of the airplane and engines. Positive and complete utilization is available only with such equipment and, except for the most amateurish strata of flying, today's price of a bare airplane means very little. As the importance of reliable and complete electronics equipment becomes more widely recognized, the closer we move to the day when we cease pricing bare airplanes but rather price them with various minimum and maximum combinations of communications, navigation and automatic steering equipment according to the prospect's pattern of flying and brand preference.

At first blush some people gag when you mention the cost of such equipment; but when you break down the components and list them, as with the ARC FES 1241, the price doesn't seem so formidable. But when you take a long cross-country in the winter months and make every appointment on time with complete reliability and back-up equipment to make communications fail-safe, the bugaboo of price disappears completely. For then you know you're getting value received far beyond a dollar and cents consideration. Modern electronic systems are as integral to the airplane today as the engine or props.

Here are the components of the complete ARC system in our demonstrator 310F:

ARC C-77C control unit; Dual (2) ARC VHF 15F navigation system (crystal controlled) consisting of communications, omni, localizer receiver and course indicator; ARC transmitter T-25C (crystal controlled) (360-channel with 50 kc spacing); ARC RT-11A VHF transceiver (crystal controlled with external squelch control. Single Simplex control for 360 channels transmit and receive with single and double channel simplexing); ARC Model ADF-21A radio compass; ARC-R31A glide path receiver, plus King KA-11 audio amplifier, Narco MBT-12 marker beacon receiver, and headset and microphone.

The $22,630 price tag also includes 50-amp, 24-volt generators, retractable (right wing) landing light, rotating beacon, taxi light and ground service plug receptacle to round out what Cessna terms the "Group 1" electronics system as one of many combinations.

But the "extras" do not end with the system detailed above. We had the time-tested, confidence-building Goodrich de-ice system, propeller anti-ice system and oxygen. A few other extras brought the total list price to $101,-016.75.

Cessna 310F is literally a picture of speed from any angle, but here's Tony Lansbarkis, Cessna 310F sales manager, admiring the speedy light twin's swept fin. (Cessna Photo.)

Cessna engineers have produced a quieter cabin with double pane windows and the upholsterers have come up with fireside armchair comfort in the reclining pilot seats now boasting retractable arm rests. They've gone all out on interior styling, blending colors and fabrics, including leather, in any number of optional arrangements. Cessna has never been a company to neglect eye appeal and the 310F is proof positive of this attainment. Ten three-color exterior paint combinations are also offered.

New Scintilla "retard" type magnetos are used on the engines for faster and easier starting and two mag switches, a starting switch and optional oil dilution switch are combined into one unit to simplify the pilot's starting procedure. With the new mags, a more convenient tachometer pickup source is obtained and the old-type magneto's tach generator is eliminated.

The new model has an improved engine induction air box which allows removal of the filter without removing the engine cowling. The instrument panel anti-glare shield has been extended into the sides of the cabin for a wrap-around effect. The propeller anti-ice switch has been made more accessible and heater controls have been changed to provide easy adjustment of heat valves. The ventilating and cooling system has been improved with a revised heat duct system providing increased air flow, heat and windshield defrosting. The shape and location of cabin outlets have also been changed for more uniform distribution of heat and a large direct outlet has been added to allow fast warm-up on the ground. A valve control provides minute adjustments for passenger comfort at all altitudes and temperatures. The windshield sheds rain like water off a duck's back for maintaining excellent forward visibility.

Whether or not the 310F is the ultimate in this now-famous model remains to be seen. When you consider how long the Beech Bonanza has been on the market and what constant improvements have done to keep it on the best seller list, you're reluctant to make predictions.

The January trip in the new 310 certainly brought home the fact that "If you really wanna *GO* you gotta pull all the *STOPS*." Only the *completely* equipped airplane can cut the mustard. And we're still on the side of those who claim that about the best and biggest bargain on the transportation horizon today is the fully-equipped light twin.

BEECH BARON

(Continued from page 20)

speed, 76-130-mph. flap operating range (white arc on airspeed indicator), 86-210 mph. normal operating range (green arc), 210-257 mph. caution range (yellow arc) and 257-mph. never exceed speed (red radial).

Beech offers a wide assortment of factory-installed equipment options for the Baron. The Baron we were in was N9634R and its equipment, weights and pricing were listed as follows:

Standard airplane, 2,960 lbs., $58,-250.

Auxiliary tanks, 11 lbs., $775.

Nose taxi light, 2 lbs., $50.

Dual Grimes rotating beacons, 4 lbs., $285.

External power receptacle, 2 lbs., $75.

Propeller unfeathering accumulators, 12 lbs., $285.

Instrument post lights, 1 lb., $150.

40-amp generators, 10 lbs., $260.

Two 24-amp 12-volt batteries, 12 lbs., $45.

Super soundproofing, 20 lbs., $130.

5th seat arrangement, 20 lbs., $350.

Collins 17L-8A transmitter and Collins 51X-3 receiver, 18 lbs., $2,200.

Collins 344D-1 omni receiver, 3 lbs., $1,140.

Collins 17L-8A standby transmitter, 2 lbs., $1,000.

Collins 51V-3 glideslope receiver, Collins 51X-3 receiver, Collins 344A-1 omni and Collins 331H-1 indicator, 27 lbs., $6,700.

Narco MBT-24 marker beacon receiver, 2 lbs., $296.

Motorola ADF-12E-2 with gonio, 17 lbs., $1,110.

Equipped airplane, 3,122 lbs., $73,-121. At 4,880-lb. gross weight, this equipped airplane's useful load was 1,758 lbs.

Here's the new 5-place Navion Rangemaster, pictured above, flying over the Navion manufacturing plant facilities at Galveston, Texas. Navion Aircraft Company is a division of Tusco Corporation. Full details of new Rangemaster have not been released.

Hook Gaston, the Beech factory Baron sales specialist, had logged over 200 hrs. in the Baron at the time we joined him. Here is his log for two trips at the time in January when we were with him briefly:

Wichita to Amarillo, 287 miles in 1:25 for 201-mph. average ground speed.

Amarillo to Phoenix, 604 miles, 2:47, 218 mph.

Phoenix to Albuquerque, 310 miles, 1:27, 214 mph.

Albuquerque to Wichita, 581 miles, 2:34, 226 mph.

Totals, Wichita to Phoenix to Wichita, 1,782 miles, 8:13, 218 mph.

Wichita to Wichita Falls, 293 miles, 1:18, 224 mph.

Wichita Falls to Dallas, 132 miles, 40 mins., 198 mph.

Dallas to Houston, 248 miles, 1:06, 226 mph.

Houston to Wichita, 580 miles, 2:46, 187 mph.

Totals, Wichita to Houston to Wichita, 1,253 miles, 5:50, 215 mph.

Gaston said the two trips totalled 3,035 miles, with the Baron averaging 216 mph. and 24 gals. of fuel per hour. He experienced headwinds on three legs, tailwinds on three legs and beam winds on two legs.

"After a couple of months of intensive flying, I find I can flight plan the Baron at better than 200 mph. block speed and make or beat my ETA every time, regardless which direction I'm headed," Gaston commented. "In other words, the Baron has climbed right on out of the 200-mph. category and it stays on top of the 215-mph. bracket at a fuel cost of only 24 gals. per hour."

That kind of performance, plus impressive handling characteristics, will carry the Baron to the head of the Beech line, giving Beech people a new star performer and a competitor with healthy growth potential.

BELL TURBINE

(Continued from page 21)

Army design competition for a new-generation light observation helicopter for which turbine power is specified, and the HUL-1M modification project with the T-63 is significant when related to the Army competition. Apparently for this reason, Bell has released very few details of the HUL-1M installation. However, the proposed Army design will be completely new. General specifications laid down for it by the Army include turbine power with a "suitable" engine, smaller and lighter size than the H-13, 110-knot minimum cruise speed, 6,000-ft. OGE hovering ceiling at 95-degree outside air temperature, 3-hour minimum endurance, payload of pilot and 3 hrs. of fuel plus 400 lbs., 4-seat capacity, improved stability and maintenance integrity of 300 hours between periodic inspections. Present Army scheduling calls for the selection of the two winning designs this Spring, with contracts to be awarded for the two test prototypes several months later. Winning designs are expected to replace fixed-wing L-19 liaison lightplanes and H-13 and H-23 light utility copters now in use.

SINGLE-ENGINE IFR

(Continued from page 27)

network of navigation facilities — all combine to portend ever increasing, effective utilization of single-engine business planes in the years ahead.

Finally, because the true worth of any business machine is its availability to do the job under most conditions, progressive aircraft salesmen stress the growing economic importance of single-engine IFR qualification. Only with such capability will their customers obtain the maximum benefits of personal air transportation in this highly competitive age.

Companies that cannot deliver won't succeed. And so it follows with the busy executive who is unable to be in the right place at the right time.

HERE'S THE SIGN OF THE FINEST SERVICE FOR YOUR PIPER AIRPLANE

Piper has established a world-wide network of Factory-Certified Service Centers to assure you of the finest service possible for your Piper airplane.
To earn the coveted designation, service organizations must meet rigid requirements, must be properly equipped and staffed by personnel who have attended the intensive service school conducted at the Piper plant.
Dozens of Piper Factory-Certified Service Centers have been established throughout the nation and around the world, and more are being designated to assure convenient and competent Piper service wherever you may wish to fly.

FOR THE BEST IN PIPER SERVICE AND MAINTENANCE VISIT THE PIPER FACTORY-CERTIFIED SERVICE CENTERS LISTED BELOW

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Austin, Texas

CATLIN AVIATION CO.
Will Rogers Field
P. O. Box 2398
MUtual 5-6644
Oklahoma City, Oklahoma

CUMMINGS & GROVES AVIATION, INC.
Houston International Airport, Hangar No. 8
MIssion 4-5593 *and OLive* 4-4351
Houston, Texas

DELAWARE AVIATION CORPORATION
North Philadelphia Airport
HObart 4-1600, *TWX PH* 520
Philadelphia 36, Pennsylvania

EXECUTIVE AIRMOTIVE, INCORPORATED
Stewart Air Park
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GArfield 8-3581, *GArfield* 2-7277
Parkersburg, West Virginia

J & J AIRCRAFT, INC.
Sarasota-Bradenton Airport
821 *General Arnold Road*
ELgin 5-6868
Sarasota, Florida

KEN-MAR AIRPARK, INC.
Ken-Mar Airpark
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MUrray 3-6589
Wichita, Kansas

RED AIRCRAFT SERVICE, INC.
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ROSS AVIATION, INC.
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Tulsa, Oklahoma

"...BY FAR THE FINEST AGRICULTURAL AIRCRAFT THAT HAS EVER BEEN PRESENTED..."

Richard P. Rice, owner of Bootheel Flying Service, Kennett, Missouri, reports: "Since I have the oldest continuous aerial agricultural operation in the state of Missouri (15 years of accident-free operation), I feel I am qualified to evaluate agricultural aircraft. I have used a number of types of aircraft and am at present using three Pawnees.

"Without reservation, I should like to say that the Pawnee is by far the finest agricultural aircraft that has ever been presented to the aerial applicating industry. Both my two pilots and I wish to express our thanks to Piper for pioneering the development of the first truly modern agricultural aircraft.

"As you say in you brochure, the Pawnee is truly the answer to an applicator's dream."

SAFEST, BEST, MOST PROFITABLE AGRICULTURAL PLANE YOU CAN BUY

Hundreds upon hundreds of Piper Pawnees in operation throughout the world—dusting and spraying crops and areas with all varieties of agricultural chemicals—have proved beyond question that the only airplane for safe, efficient, profitable dusting and spraying is an airplane specifically designed to do the job. Reports from Pawnee operators attest over and over again that this is a truly remarkable agricultural airplane. More than one pilot is still flying because the Pawnee's "safety capsule" cockpit protected him, exactly as planned and designed.

PIPER Pawnee

Regardless of your dusting or spraying requirements, your investment in a Pawnee or fleet of Pawnees will bring you a higher return per dollar than any other equipment you can buy.

If you want profits, pick the PAWNEE. NEW DEFERRED PAYMENT PURCHASE PLAN. See your Piper distributor or write for new 1961 Pawnee brochure, Dept. F-1.

WORLD'S LEADING BUILDER OF AGRICULTURAL AIRPLANES

PIPER

AIRCRAFT CORPORATION LOCK HAVEN, PENNSYLVANIA

FIRST NEW AIR FORCE VERSION OF CESSNA TWIN is shown prior to delivery to the Strategic Air Command. Known as the Air Force U-3B, it is an improved model of the earlier U-3A, which has been in use since 1957. The B model features same refinements as the commercial 310F, with new third window on each side of cabin and pointed tips on fuel tanks, spinners and nose. The USAF has ordered 35 of the new B models. USAF obtains spare parts through commercial distributors without inventorying them.

—(Cessna Photo.)

AIR REPORT

(Continued from page 6)

the Airport Operators Council, the American Association of Airport Executives and the National Association of State Aviation Officials. The needed airport construction and improvements are necessary to meet the rapidly increasing demands of business aircraft and airline service into small and medium-size communities as well as those of jet lines into the larger metropolitan areas. The three associations will submit their findings to the new Kennedy administration and to Congress. The survey compiled a list of needed projects on a state-by-state and airport-by-airport basis, their findings showing that an average expenditure of over $134 million annually will be needed during the next four years to augment the $588 million which the state and local public agencies anticipate they will be able to raise.

BEECH AIRCRAFT SALES INCREASED 11 PER CENT during the first quarter of the firm's 1961 fiscal year, Mrs. O. A. Beech reported at the annual stockholders' meeting last month. She expects record aircraft sales during 1961.

CONVAIR 990 SECOND-GENERATION JET AIRLINER made its first flight late in January at San Diego. The 990, powered by four General Electric CJ-805-23 aft-fan jet engines rated at 16,100 lbs. of thrust each, has a supersonic wing and cruises 640 mph. as the fastest of the jet airliners. On the thin wing's upper surface are four streamlined "speed capsules," from 21.5 to 24 ft. long. Gross weight is 239,200 lbs.

NEED FOR REQUIRING DISTANCE MEASURING EQUIPMENT on all high-speed aircraft operating in high-density traffic areas will be discussed at a March 22 conference in Washington by all interested parties after FAA Administrator E. R. Quesada emphasized the need for continuous and exact knowledge by pilots of a high-speed aircraft's position and progress in high-density traffic areas. Of 725 omni stations, 344 are now equipped with DME and plans call for 883 of them to be DME-equipped by 1966. In addition, 236 military Tacan stations are operating and some 12,000 military aircraft are equipped with distance measuring equipment. . . . **FAA HAS ORDERED A BOEING 720 JET TRANSPORT** for use in training safety inspectors. It will be delivered in May.

THE LAWYER-PILOTS ASSOCIATION'S quarterly board of directors meeting March 17-19 at the Sky Riders Motel, Phoenix, will discuss proposed codification of the Civil Air Regulations and Civil Air Manuals. The group contends the Federal Aviation Act requires amendment, particularly as to the procedure for enforcement, and describes the Act as undemocratic in its present procedure because it places the burden upon a respondent to prove his innocence.

MORE UNCONTROLLED AIRSPACE FOR VFR OPERATIONS when visibility is less than 3 miles will be available as a result of an amendment to Part 60 of the CAR adopted by FAA. The amendment raises the floor of control areas (airways) from the existing 700 ft. above the surface to at least 1,200 ft. above the surface, thus providing an additional 500 ft. or more of uncontrolled airspace. Even more uncontrolled VFR airspace will be provided where possible to afford VFR flight safety over ground obstructions such as TV-radio towers, by establishing the control area (airways) floor at least 500 ft. below the minimum enroute instrument altitude. Minimum enroute instrument altitudes are presently at least 1,000 ft. over ground obstructions. Specifically, Amendment 60-21 establishes that the control zones around airports shall normally be 5 miles in radius with extensions where necessary for arriving and departing IFR flights and will extend upward from the surface. Transition areas to

NEW PRIVATE AIRPORT AT ALBUQUERQUE is four miles north of the city limits on superhighway to Santa Fe. Named Coronado Airport, it has two paved and lighted runways, 3,300 and 3,500 ft. long, with 10 acres of paved ramp, a large storage hangar, 36 T-hangar units and tiedowns for 200 aircraft. It was founded by Aviation, Inc., headed by Joe Wilson as president. The Coronado terminal serves as display and sales headquarters for Cessna aircraft and has a coffee shop, pilots' lounge and executive conference room. Others in Aviation, Inc., are Dr. Henry M. Cryer, Jr., vice president, and Miss Jeanne W. Cryer, secretary-treasurer. Dr. A. J. Fisher is a director. Valued at a million dollars, Coronado Airport offers a 24-hr. service.

Aero Commander No. 1,001 Delivered to Japan

TOM Harris, General Manager of Aero Commander, Inc., is pictured at the microphone above at ceremonies in the delivery of Aero Commander No. 1,001 to the Asahi Press of Tokyo, which took delivery just eight years ago of Aero Commander No. 1, a Model 520 which is still in active service with the newspaper. Asahi's newest Commander is a 1961 Model 680F. It also owns a Model 680 Commander, which was Serial No. 445. Asahi publishes the newspaper with the world's largest circulation — 3.5 million copies daily and its three Aero Commanders are used by correspondents and photographers on news assignments as well as by executives. All three Commanders were sold to the firm by Air Carrier Service Corp. of Washington, D. C., distributors for Aero Commander in the Far East. Floyd Atchison was to deliver the new 680F across the Pacific, flying by way of Hawaii and Wake Island. Pictured at right is Miss Jerrie Cobb of Aero Commander, Inc., turning over keys to the new 680F to Mr. Uchimora of Asahi Press.

contain the flight paths of IFR aircraft operating between airports and control areas will be established around control zones and will have a floor of at least 1,200 ft. However, transition areas with a floor of 700 ft. above the surface will be established at airports having no control zone for which instrument approach procedures have been prescribed. All of the airspace between the floor of established transition areas and the control areas will be uncontrolled airspace and will be available to VFR pilots when the visibility is as low as one mile. The amendment has no effect on VFR flights when visibility is more than 3 miles. Whenever the flight visibility is less than 3 miles, pilots may not operate within controlled airspace, including the new transition areas, without an air traffic clearance. The new amendment also will permit VFR operations "clear of clouds" in uncontrolled airspace at and below an altitude of 1,200 ft. above the surface instead of the previous maximum of 700 ft. Amendment 60-21 will become effective Feb. 21, 1961, but due to the complex nature of the action to be accomplished, the total revision of the airspace structure can not be completed for some time.

NEW OFFICERS OF THE CALIFORNIA AIRCRAFT DEALERS ASSOCIATION FOR 1961 are: President, John C. Patterson, Patterson Aircraft, Sacramento; first and second vice presidents, Norman Larson, Van Nuys, and Lee Renshaw, Business Aircraft Distributors, Oakland; treasurer, Jack Baumann, Santa Monica Aviation, and secretary, Robert Gunnell, Gunnell Aviation, Santa Monica.

NEW VAN NUYS SKYWAYS, a million-dollar flight center on Municipal Airport, Van Nuys, California, was opened in February with open house showing of 1961 Cessnas, for which the firm is dealer. Finley Brinley (center), president of the firm, is shown prior to the opening with Randy Griesinger, (left), Cessna public relations manager, and Jack Wells (right), account executive of Boylhart, Lovett & Dean, which represents Skyways.

UNIFORM STANDARDS FOR AIRCRAFT MARKING, issued by FAA as Amendment 1-4 of the Civil Air Regulations, require markings at least 12 inches high on the fuselage or, at the option of the aircraft owner, on the vertical tail. The amended regulation provides a 5-year period until Jan. 1, 1966, for compliance, except that all aircraft on or after Jan. 1, 1962, which are newly marked or completely remarked, must conform to the new standards.

THE TWO-PLACE UMBAUGH AUTOGYRO PROTOTYPE resumed its demonstration tour in the South and Southwest late in Januarv with brief flight demonstrations in Dallas, Houston and in Mexico on the schedule.

NEW COMMERCIAL HELICOPTERS were shown last month at the 13th annual convention of the Helicopter Association of America at Haddonfield, New Jersey. HAA is the official organization of commercial copter operators. Hal C. Conners, general

manager of Helicopter Air Lift of Chicago, a division of Butler Aviation, was elected president succeeding Robert L. Suggs, president of Petroleum Helicopters, Lafayette, La. Vice presidents elected are Hersey Young, Helicopters, Inc., Denver and Robert E. Trimble, Aetna Helicopters, Etna, California. J. Cully Weadock, Chesapeake & Potomac Airways, Baltimore, was named secretary, and Peter Wright, Keystone Helicopter, Philadelphia, was re-elected treasurer.

BELL HELICOPTER EXPECTS ITS BIGGEST COMMERCIAL SALES YEAR EVER IN 1961, with Commercial Sales Manager Dwane K. Jose predicting a 50% increase over 1960. General charter operators, dominate users of Bells and Jose has announced an extensive merchandising program in support of charter operators' sales efforts. The program includes regional sales clinics, a charter operator-oriented advertising campaign, a charter service merchandising kit and an introductory demonstration tour of Bell's 1961 line of helicopters. Of more than 1,000 commercial helicopters in use in the U. S. and Canada, over 700 are operated by more than 150 charter operators. Bell's 1961 models feature significant improvements and lower prices.

AUTAIR HELICOPTER SERVICE, Montreal, has ordered four high-altitude Bell Model 47G-3 helicopters and one Model 47G-2A for early 1961 delivery. Autair operates one of the largest fleets of Bells in Canada.

THE U. S. NAVY HAS ORDERED $34.2 MILLION WORTH OF TWIN-TURBINE SIKORSKY HSS-2 HELICOPTERS, with deliveries scheduled through 1962. The HSS-2 is the Navy's first all-weather helicopter which can detect, identify, track and destroy enemy submarines while achieving maximum range. Now in the final phases of its Navy trial and demonstration program, it has been flown at 162 knots indicated air speed at 6,000 ft.

BEECH AIRCRAFT PROMOTIONS last month elevated James Yarnell (left) to be advertising manager and James R. Greenwood (right) to be press relations manager, it was announced by Phil McKnight, director of advertising and public relations.

EXPANSION OF BEECH DISTRIBUTORSHIP for Utah, most of Idaho, western Wyoming and eastern Oregon was completed recently when W. Lynn Roberts, well-known fixed-base operator, joined Utah-Idaho Aircraft Co., Boise, as a stockholder and president-general manager. Headquarters will be at Boise with the present sales office at Salt Lake City continuing, with Sterling Meyer as sales manager there. Boise personnel include Max Bierwolf, new plane sales; Jud Stevens, used plane sales; Ken Foote, shop foreman and Charles Little, parts manager. Roberts is shown above (center) with Charles Forrer of Beech (left) and Wyman L. Henry, Beech vice president-marketing.

—(Beech Photo.)

SIX NEW WORLD SPEED AND PAYLOAD RECORDS have been claimed for the Convair B-58 supersonic bomber. Three records are for a 1,000-km. course (about 621 miles) and are 1,200.94 mph. for (1) speed with no payload, (2) speed with 1,000-kg. payload (about 2,200 lbs.) and (3) speed with 2,000-kg. payload (about 4,400 lbs.) and three additional records are for 1,061.808 mph. over a 2,000-km. course (about 1,242 miles), being (1) speed with no payload, (2) speed with 1,000-kg. payload and (3) speed with 2,000-kg. payload. The new records eclipsed 5 Russian and 1 U. S. Air Force speed records.

LOCKHEED ELECTRA SPEED RESTRICTIONS HAVE BEEN REMOVED from aircraft incorporating Lockheed modifications, which have been approved by FAA. Unmodified Electras are restricted to 259 mph. but those with the approved modifications may be operated at the original design speed of 373 mph. All Electras will have been modified by the middle of 1961.

DR. THEODORE P. WRIGHT, former CAA Administrator and retiring vice president for research at Cornell University, has been elected president of the Flight Safety Foundation, an independent, non-profit organization, of which Jerome Lederer is managing director. . . . **A. HOWARD HASBROOK** has been appointed chief of the Crash Safety Section in the FAA's Civil Aeromedical Research Institute at Norman, Oklahoma, it was announced by Dr. H. D. Estes, director. A member of Cornell University's crash injury research project for 10 years and director of that group for 5 years, Hasbrook is internationally recognized as a leading crash injury specialist.

H. S. CHRISTENSEN has been named by Bendix Radio as marketing manager for general aviation products, it was announced last month by C. I. Rice, manager of avionic products, Bendix Radio Division. Formerly engaged in avionic product planning, Christensen now assumes the total marketing responsibility for communications, navigation and radar equipment in the general aviation field for Bendix. He will be directly responsible for sales and relations with Bendix dealers and general aviation aircraft manufacturers and will also coordinate advertising and product planning. His new position reflects expansion by Bendix of its product line to include equipment specifically designed for light and medium multi-engine aircraft. Before joining Bendix early in 1960, Christensen was commercial sales manager of Aircraft Radio Corp., having been with ARC fifteen years.

Christensen

OHIO AVIATION COMPANY'S new Cleveland Division has been appointed distributor for Beech Aircraft Corporation in 16 counties in Northeast Ohio, according to Leddy Greever, Beech vice president of commercial sales. Henry L. Reichelt has been named manager of the Cleveland Division, established at Cuyahoga County Airport as a separate Beech distributorship by Ohio Aviation. Reichelt joined Ohio Aviation in 1959 as a sales representative. His staff members include Don Blasl, chief pilot, and Earle Wade, Barry Gray and Mike Grogan, sales representatives. The firm hopes to establish a $300,000 business flying center at Cuyahoga County Airport in the near future. It will offer the complete line of Beech executive airplanes for Cleveland, Akron, Canton, Alliance, Wooster and Mansfield.

Reichelt

FOR THE MOST SIGNIFICANT

ACHIEVEMENT IN AIR TRAFFIC SAFETY, a new annual award has been established by William P. Lear, founder and chairman of Lear, Inc. It will be presented annually by an independent selection committee to the person or group making the most lasting contributions to air safety. Lear said the award, a 36-in. silver trophy, will be presented first in 1962. Its establishment was announced at ceremonies commemorating the 30th anniversary of Lear's firm.

ROGER SEKADLO, former aviation director for Milwaukee County, Wisconsin, has assumed duties as the new aviation director for the city of Ft. Worth, Texas, in charge of Amon Carter and Meacham Fields.

Airmen's Calendar

Feb. 18—Safety Flight Clinic for Pilots, sponsored by Texas Aeronautics Commission, Villa Capri Motel, Austin, Tex.

Feb. 26-28—10th Annual Texas Agricultural Aviation Conference, Texas A. & M. College, College Station, Texas.

March 11-18—10th Annual Idaho Air Tour to Mexico.

March 13-31—Aviation Institute for Business Pilots and Commercial Carriers, University of Southern California, Los Angeles.

March 14-15—Montana Aviation Trades Association Annual Convention, Helena, Montana.

March 16-18—5th National Conference on Aviation Education, Mayflower Hotel, Washington, D. C.

March 17—Texas Private Fliers Association Flight to Mazatlan, Mexico, Decima Hotel, Headquarters.

March 28-29—Nucleonics in Flight Symposium, American Nuclear Society, Statler Hilton Hotel, Dallas.

April 4-5—Aviation Technician School Administrators Conference, Purdue University, Lafayette, Ind.

April 22-25—34h Annual Business Meeting, American Association of Airport Executives, Broadmoor Hotel, Colorado Springs.

April 27-29—1961 National Intercollegiate Flying Association's 13th Annual Air Meet and Conference, Texas A. & M. College, College Station, Texas.

April 30-May 6—1961 Annual Aviation/Space Writers Association Annual Meeting and News Conference, Commodore Hotel, New York City.

May 3-5—17th Annual National Forum, American Helicopter Society, Sheraton Park Hotel, Washington, D. C.

May 12-14—1961 Mid-America Air Fair, Wichita, Kansas.

May 26-June 4—24th International Air Show, LeBourget Airfield, Paris, France.

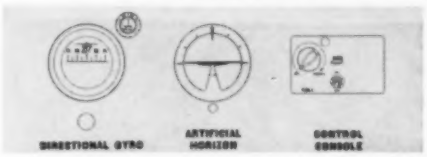
May 27—11th All Women's International Air Race, Lehigh Acres, Florida, to Nassau, BWI. For details, write Mary Barrer.

June 13-15—37th Aviation Distributors and Manufacturers Association Meeting, Dennis Hotel, Atlantic City, New Jersey.

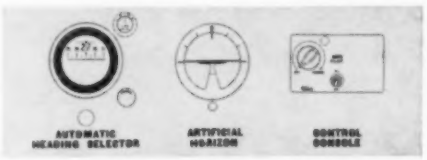
the **Mitchell** AUTOPILOT gives you precision heading and roll control for as low as **$1095**

FAA-approved for most single and twin-engine business aircraft

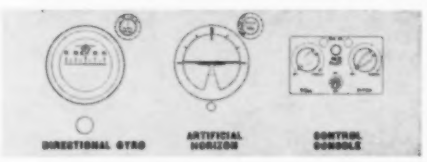
Every Mitchell Autopilot System "remembers" and holds gyro-set headings. Executive and Commander Systems have the further advantage of turning to pre-selected headings. And because each system is made up of standard units, you can start with the low-cost Mitchell Co-Pilot and build up later to the superb Commander System. See your Mitchell dealer today or write for complete information about any of the six Mitchell systems.



THE CO-PILOT is a two-control system that controls heading and roll by picking up signals from directional gyro and artificial horizon. Heading can be controlled either by manual adjustment of the turn trim knob, or it can be locked into the directional gyro to hold a zero heading automatically.

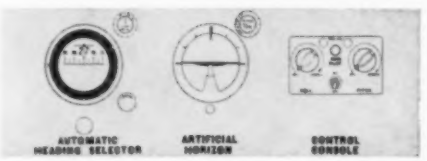


THE EXECUTIVE CO-PILOT is also a two-control system that controls roll and heading. It differs from the Co-Pilot, however, in that it includes the automatic heading selector. Heading is controlled simply by dialing the desired heading on a fully visible azimuth ring built into the face of the directional gyro.

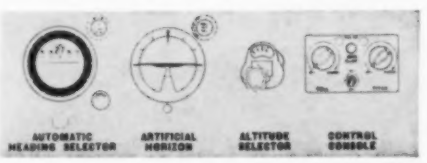


THE CAPTAIN is a three-control automatic pilot that controls pitch as well as roll and heading. This famous Mitchell system has been used on more record-breaking endurance and distance flights than any other autopilot.

THE SENIOR CAPTAIN is the same basic system as the Captain with the addition of the automatic altitude selector. More than just an altitude lock, the altitude selector enables you to dial the altitude you wish to fly in flight or before take-off. The Senior Captain will take you to your pre-selected altitude, level off, and hold you there.



THE EXECUTIVE CAPTAIN is a basic three-control Mitchell with the automatic heading selector but not the altitude selector. To control heading with the Executive Captain, you simply dial your desired heading on the fully visible azimuth ring. The autopilot will turn the aircraft any required number of degrees to reach your pre-selected heading.



THE COMMANDER system includes both automatic heading selector and automatic altitude selector. Especially useful for instrument flying, it outperforms autopilots that sell at several times its price. The Commander system utilizes the same components as the Executive Captain with the addition of the automatic altitude selector.

AUTHORIZED NATIONAL SALES AGENCIES

For illustrated brochure, write Mitchell Sales Agency, Box 68, Mineral Wells, Texas

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Vandalia, Ohio

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Tampa, Florida: Atlanta, Georgia

THE DON HORN COMPANY
Memphis, Tennessee

GENERAL AIRCRAFT SUPPLY CORP.
Detroit, Michigan: Berea (Cleveland), Ohio
Philadelphia, Pennsylvania

GENERAL AVIATION SUPPLY COMPANY
St. Louis, Missouri: Oklahoma City, Oklahoma
Dallas and Houston, Texas: Phoenix, Arizona

Manufactured by MITCHELL INDUSTRIES, INC., Mineral Wells, Texas

PRESSURIZED MARKSMAN

(Continued from page 44)

conditioned. Siberell says the pressurized cabin and cockpit are quieter than those in a DC-6. In addition to conventional soundproofing, the Marksman carries a 4-inch thickness of styrofoam which is sprayed between the stringers in the cabin floor. Other soundproofing includes foil tape and fiberglass.

Three models of the pressurized Marksman are offered by On Mark, as follows:

Specification A — R-2800-75/79 engines (less than 350 hrs. since major overhaul) with 23E50-505 props; 800-gal. standard fuel capacity for 1,200-mi. range; standard On Mark executive interior, custom exterior finish, $257,430.

Specification B — Same as "A" except with R-2800-83AM-4A zero-time engines; high-activity 33-E-60 props; 165-gal. wingtip tanks for 1,130-gal. fuel capacity for 1,800-mi. range; DC-6-type wheels and brakes with chrome-plated landing gear, $314,475.

Specification C — Same as "B" except with R-2800-CB-16/17 zero-time engines equipped with ADI and 43-E-60 high-activity reversible props and two 100-gal. pliocell internal wing tanks for 1,330-gal. fuel capacity for 2,500-mile range, $361,492.

With 35,000-lb. take-off gross weight, 31,000-lb. landing weight and 24,000 to 25,000-lb. empty weight, useful load is 10,000 to 11,000 lbs. Performance includes cruising speeds of 325 mph. at 16,000 ft. and 80 gals. per hr. per engine for Specification A, 350 mph. at 18,000 ft. and 80 gals. per hr. per engine for Specification B and 365 mph. at 23,000 ft. and 95 gals. per hr. per engine for Specification C. The following performance is based on the Marksman with R-2800-75/79 engines: Take-off distance to clear 50-ft. obstacle, sea level, zero wind, 70-deg. outside air temperature, 32,600-lb. gross weight, 3,495 ft.; landing distance over 50-ft. obstacle, sea level, zero wind, 70-deg. OAT, 30,000 lbs., 3,000 ft.; single-engine ceiling, 16,400 ft.; single-engine speed at 16,400 ft., 200 mph.; power-off stall speed, 85 mph. with gear and flaps down and at 29,000-lb. gross weight with tip tanks.

Horton & Horton's custom interior in the Wheaton Glass Marksman, specified by Frank Wheaton, Jr., president, provides 3 seat belts in the cockpit for pilot, co-pilot and a jump-seat, with 8 seat belts in the cabin, utilizing 4 reclining single chairs and a 4-place divan. The divan is extra long and conceals under one end a toilet, with a double-lined bulkhead curtain drape dividing the long divan for privacy as desired. The buffet has hidden depth providing 50% more capacity than is apparent. Headliner, sidewalls and trim are washable, with the headliner in off-white grass cloth and sidewalls and trim in Celadon blue. The divan is in blue and brown and the seats are in dark blue stripe, with the carpet in midnight blue. Woodwork is in primavera mahogany Formica. Gold Crest lighting is used with translucent overhead channel plus individual recessed units for all seats. Cabin altimeter, airspeed indicator and C4 compass repeater are finished to match the decor.

NEW CLEAR VIEW WINDSHIELD for installation in all Model 18 Twin Beeches fits the standard Beech window frame and is made of military specification Plexiglas by Airline Products, Inc., 5536 Satsuma Ave., N. Hollywood, Calif.

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FAA Speed-up for Certificating Aircraft Modifications

THE Federal Aviation Agency has a new 5-point program to speed up certification of modified aircraft, with emphasis on cooperation with the industry. Reporting 983 supplemental type certificates (STC's) last year as compared to only 495 in 1957, George C. Prill, FAA Deputy Director of the Bureau of Flight Standards, said the program is designed to make approval of aircraft changes prompt and uniform. It will include the following steps: 1. Improved system of dissemination of data and information between FAA regions, with a special office in Washington to handle these matters under a chief modification engineer. 2. Increased authority may be given industry facilities by FAA in a new "approved modification station" rating authorizing approval of STC's covering their modifications. 3. Both FAA and the industry will work on improved guides for FAA field personnel to produce more rapid and uniform approval of changes, with manufacturers urged to provide manuals to aid this purpose. This is particularly applicable to new, small, high-performance business aircraft which have special interiors installed after they leave the factory. 4. The industry will consider drafting and proposing to FAA a new CAR part pertaining to large aircraft for business use. They will also consider a new special regulation pertaining to modifying transport type aircraft for business use. 5. The industry agreed to advance planning in modification operations to give FAA sufficient warning of peak workloads, especially when adequate scheduling of required tests must be arranged.

EXECUTIVE AIRCRAFT SERVICE, Redbird Airport, Dallas, had Harold Teague's KTBC-TV Convair 240 from Austin, Texas, for installation of outer-wing fuel tanks, auxiliary power unit and interior modifications and repairs. . . . Russ Purchase brought in his Dow Chemical DC-3 for radome replacement and interior repairs. . . . The LeTourneau Westinghouse Douglas B-23, Ernest Valdes, pilot, was in for aircraft and engine work. . . . George Heindell's Interstate Pipe Line Beech E18S from Shreveport received cabin heater overhaul and other work. . . . Dale Radcliffe's Houston-based Gulf Oil Gulfstar was in for repairs.

COLLINS RADIO COMPANY has named Raymond V. Bruland, formerly Central European manager for Collins, as marketing manager of the company's Cedar Rapids Division aviation product line. Before joining Collins, Bruland was superintendent of communications for Braniff International Airways and Panagra in Lima.

PACIFIC AIRMOTIVE CORPORATION, Burbank, had indicated 1960 sales of about $33,000,000, with profit after taxes of about $50,000, according to John W. Myers, chairman. The firm's last-half earnings more than offset a loss of $365,700 for the first half of the year.

AVIATION INSTRUMENT MANUFACTURING CORP., Houston, reports that Dornier Aircraft, West Germany, has specified its Models AIM 213-1 and 643-S gyros as standard equipment in the single-engine Dornier DO-27 STOL workplane after having already chosen the Texas gyros as standard in the twin-engine DO-28. These are the same 3-inch, nontumbling vacuum gyros which are standard equipment in Aero Commanders and factory-installed optional equipment in Beechcrafts, according to Frank W. Washam, sales manager of AIM.

MOTOROLA AVIATION ELECTRONICS, Culver City, California, has named James A. Farris as service

COMPARE

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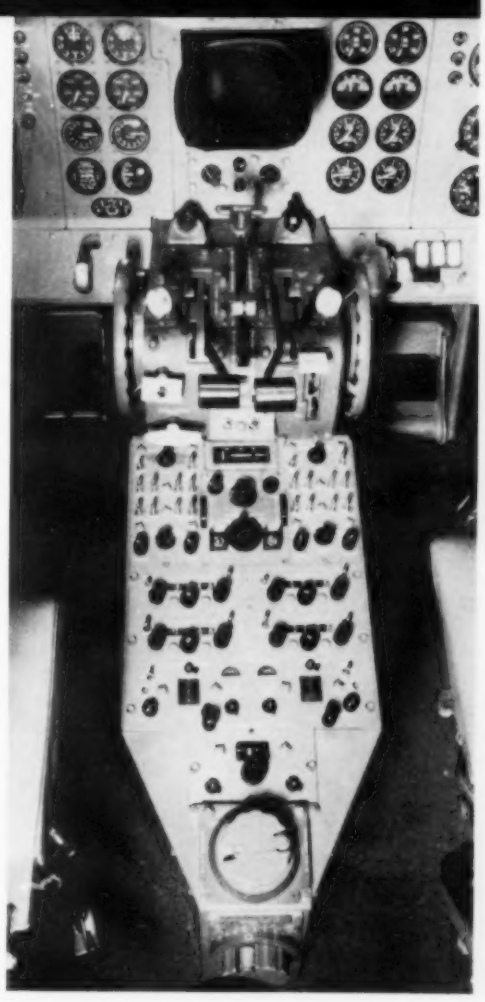

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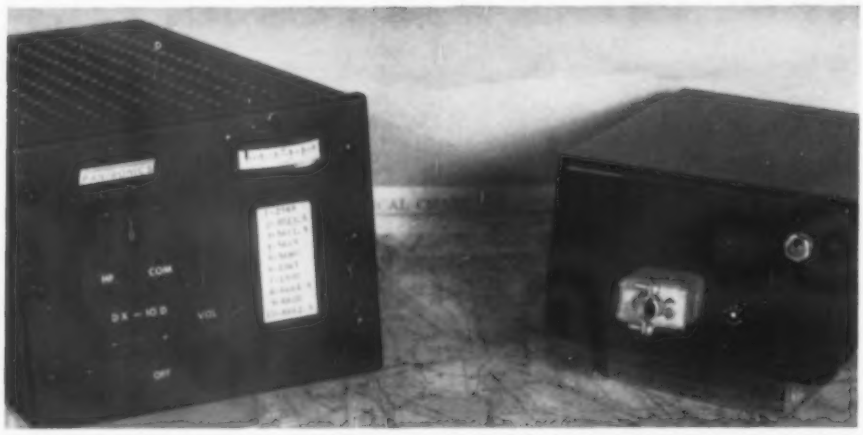

NEW HIGH FREQUENCY PANCOM DX10-D TRANSCEIVER for business planes is panel-mounted, with separate power supply, and features long-range communications with 10 crystal-controlled channels and 50-watt transmitter output. Developed and produced by PanTronics Corp., Ft. Lauderdale, Fla., it is available in 12 and 24-volt versions with $990-$1,035 price including 10 crystals and heavy-duty power supply. Remotely-mounted version is also available. The new set also features dual-conversion receiver, trimmer-tuned coils and slide-rule antenna loading meter. PanTronics was recently formed by Hillyer A. DuBois, president, with a 12-year background in audio electronics and operator of the East Hampton (Long Island) Airport; Ed Nilsson, vice president and former vice president-general manager of SunAir Electronics; Konrad K. Pangratz, project engineer and until recently SunAir design engineer, and Miss Gloria Webb, secretary-treasurer, former vice president of Magnetic Core Corp.

manager, succeeding Matthew W. Krim, recently appointed staff assistant to the general manager. Farris has been assistant service manager for the last four years.

AERO CORP. OF ATLANTA, Municipal Airport, Atlanta, Georgia, performed radio and electrical work on Bob Herring's State of Alabama Beech C-45 and Bill Miller's Mississippi Power & Light Beech D-18. . . . B. E. Menard had his Columbia Gas System Lodestar in for X-ray inspection. . . . Brake work was performed on L. C. McGeeHee's Piedmont Chemicals Aero Commander and H. Norris' Norris Flying Service Douglas B-23 was in for work.

AIRWORK CORPORATION, Millville, New Jersey, has a new back-up plan for users of Rolls-Royce Dart turboprop engines. It offers the same comprehensive Airwork engine service to Gulfstream and Friendship owners as that given to owners of piston-engine aircraft, without asking the owner to make advance payments to make sure Dart service will be available on an emergency basis. New Dart engines are maintained in storage at Millville for immediate delivery and held for premature removal requirements only. Airwork believes premature removals will be rare but will invest in these spares as a service to the industry. Scheduled Dart engine overhauls are completed within 21 days.

DALLAS AERO SERVICE, Love Field, Dallas, performed spar modifications on four de Havilland Doves, including those of R. M. Barrett, Edgehill Farms, Norris Flying Service and Carcia Construction. . . . Don McDonald's Burroughs, Inc., Lodestar was in for radio and electrical rewiring, new interior, new exterior paint and tail angle-of-incidence change. . . . Leon Purdin's Bernard & Burk Aero Commander was in for engine work.

READING AVIATION SERVICE, Municipal Airport, Reading, Pa., reports 24 firms have already reserved exhibit space for its 12th annual national maintenance and operations meeting on June 2-3.

REMMERT-WERNER, INC., Lambert Field, St. Louis, has delivered to Robert Boyanovsky and William Frame, pilots for Peabody Coal Company, a newly converted Convair with 16-passenger custom interior. It is equipped with Bendix RDR radar, Sperry Gyrosyn compass, dual Collins 51R3 omni and radio magnetic indicators, Collins Integrated Flight System, dual Bendix ADF with iron core loops, Collins 17L8-51X VHF and ARC-210 VHF transceivers, isolation amplifier and custom radio and instrument panels. . . . Crucible Steel's

DC-3C

Full airline equipment includes dual Collins omni, dual Bendix ADF, Collins H.F., V.H.F. transceiver, heated birdproof windshield, Whitaker hydraulic system, Hayes brakes, Janitrol heater, Air-stair door. Just finished 8000 hr. major airframe overhaul by P.A.C. Low engine time. Airline interior.

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  Teterboro, New Jersey
- Logan International Airport
  East Boston, Massachusetts
- International Airport
  Philadelphia, Pennsylvania
- New Castle County Airport
  Wilmington, Delaware

BUSINESS AIRCRAFT, INC.
9011 Randolph Street
Houston International Airport
Houston, Texas — MI 4-5595

BUTLER CO., AVIATION DIVISION
Midway Airport, Chicago, Ill.

CURREY SANDERS AIRCRAFT CO., INC.
Downtown Municipal Airport, Shreveport, La.

CUTTER-CARR FLYING SERVICE, INC.
West Mesa Airport, Albuquerque, New Mexico

GRAY AIRCRAFT SVC. CO., INC.
D. A. Cody, Service Manager
Love Field, Dallas, Texas

GREENSBORO-HIGH POINT AIR SERVICE, INC.
Greensboro-High Point Airport
Greensboro, North Carolina

ELLIOTT FLYING SERVICE
- Municipal Airport, Des Moines, Iowa
- Municipal Airport, Davenport, Iowa

THE NORMAN LARSON CO. PLANESERVICE, INC. (Service Division)
Van Nuys Airport, Van Nuys, Calif.
(Los Angeles Area)

PIEDMONT AVIATION, INC.
Smith Reynolds Airport
Winston-Salem, North Carolina

ROSCOE TURNER AERONAUTICAL CORP.
Municipal Airport, Indianapolis, Ind.

TEXAS AVIATION CORPORATION
G. K. Roberts, Pounds Field
Tyler, Texas

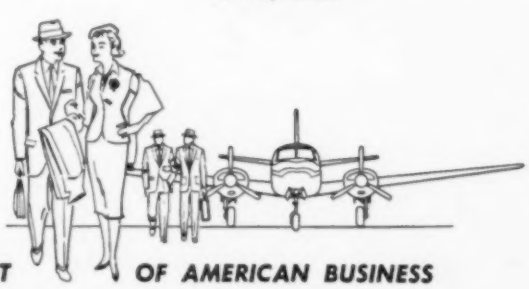
TOPEKA AIRCRAFT SALES & SERVICE
Municipal Airport, Topeka, Kansas

TRADEWIND AIRPORT CORP.
Tradewind Airport, Amarillo, Texas

TULSAIR DISTRIBUTORS, INC.
Hangar 8, Municipal Airport, Tulsa, Oklahoma

UNITED AIRPLANE SALES, INC.
New Municipal Airport
Wichita, Kansas

Beechcraft



BEECHCRAFTS ARE THE AIR FLEET OF AMERICAN BUSINESS

DC-3 was in for wing exchange. . . . Wabush Lake Railway Company has taken delivery of another DC-3 from Remmert-Werner. It is equipped with Sperry Gyrosyn compass, dual Collins 51R3 omni, dual ARC-21 ADF, Collins 17L6-51R VHF communications, ARC-210 standby, Collins 51V glideslope, Remmert lightweight landing gear doors and isolation amplifier. In for engine work were Morris Avery in a Christler & Avery Twin Beech, Falstaff Brewing's DC-3 flown by Hank Haddock and Bud Willett, the A. E. Staley DC-3 flown by Lew Rinebold and Chet Wesolek and L. V. Brandhorst's Oster Manufacturing DC-3. . . . Bill Watt and Maynard Krueger took their Hoover Company DC-3 to R-W at Pompano Beach for installation of cowl flap cinch cables and spring-loaded cowl flaps.

AIRCRAFT SPECIALISTS, INC., is establishing a complete airmotive complex for overhaul and maintenance on the Harry P. Williams Memorial Airport at Patterson, Louisiana, made famous 30 years ago by Wedell-Williams of early airline, aircraft racing and custom aircraft designing and building. Dr. I. H. Saltz of Morgan City, La., is president, and G. H. Nichols, formerly chief mechanic with TACA and chief inspector with Pan Air Corp., is vice president and shop superintendent. Dr. Saltz says the firm will complete hangar and shop facilities about April 1, employing about 100 persons in the servicing, maintenance and overhaul of private, executive and military aircraft. Future plans include an instrument and radio shop, jet overhaul shop and a freight terminal.

BEECH DOMESTIC SALES STAFF CHANGES announced by Leddy Greever moved Kenneth D. Holzer (left, above) into the position of manager of the Beech dealer development program and made Michael M. Gordon (right) as manager of Debonair sales. During the past year Holzer was both manager of the dealer program and manager of Debonair sales, with Gordon as his assistant.

NATIONAL AERONAUTICAL SERVICES ASSOCIATION reports the following new contracts received by member companies: Aerodex of Miami, $10,000,000 for overhaul of four types of U. S. Air Force engines including Lycoming T53-L-1B turbine in helicopters. . . . Dallas Airmotive, Dallas, $1,700,000 for overhaul of USAF R-1830 engines. . . . Hayes Corp., Birmingham, $5,900,000 for maintenance of approximately 400 Army fixed-wing aircraft and 135 helicopters at Ft. Rucker. . . . Lockheed Aircraft Service, Ontario, California, $1,100,000 for rehabilitation of 18 Air Force F-86D jet fighters. . . . Big State Industries, Inc., Mineral Wells, Texas, $230,000 to rebuild and modify Army H-21C helicopter rotor hub assemblies. . . . Southwest Air-

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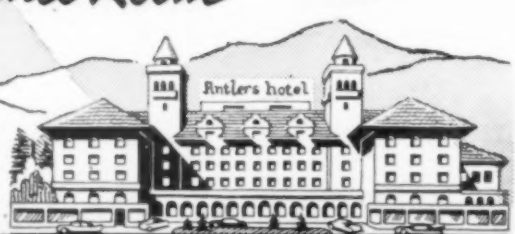

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FIRST RADAR INSTALLATION IN NEW MODEL 500B AERO COMMANDER is pictured above and was made by Robbins Aviation at Pontiac, Michigan. Gene Baker, president of Robbins, said an RCA AVQ-50 radar was installed with a Chamberlain Aviation radome. Note special 3-inch indicator mount on instrument panel for easy viewing. Robbins Aviation is Aero Commander distributor and specializes in custom electronics installations for all types of aircraft. Baker being a nationally-known leader in business aircraft electronics.

motive, Dallas, $94,000 to overhaul compressor rotor assemblies for USAF. . . . The Association is forming a technical committee on Army aviation "to assist the Army in arriving at more efficient and economical ways to accomplish its aircraft maintenance" as a result of a suggestion made by Major General Richard D. Meyer, Army deputy chief of aviation transportation, during the recent Third Annual Army Aviation Contract Services Symposium in Washington.

AIRESEARCH AVIATION SERVICE, Los Angeles International Airport, has started work on an executive interior for the Martin Company's second Grumman Gulfstream, flown by Chief Pilot Will Smith. The modification will be similar to that completed by AirResearch a year ago. Included are a custom exterior paint job, installation of Sperry SP-20 autopilot plus complete Bendix weather radar and dual communications, navigation and radio package. . . . Minnesota Mining & Manufacturing's Convair 340 was brought in by Chief Pilot Frank Thera and Mel Longlet for installation of the 440 speed and gross weight kits, additional radio, replacement of interior headlining, partial refurbishing and modification of air conditioning system. . . . Tom

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Mayson's Superior Oil Gulfstream and a Continental Oil Gulfstream delivered by C. F. Zimmerman, manager of aviation operations, and Chief Pilot Eddie Ross, are undergoing modification of the AiResearch auxiliary gas turbine power units to incorporate 200-amp generators. . . . California Hawaiian has a Model 1049 Constellation in the hangar for installation of RCA AVQ-50 radar and a McMillan radome. . . . A complete custom exterior paint job was applied to an Aerovias Sud Americana DC-6. . . . Air France has ordered 26 AiResearch maximizer kits and 200,000-BTU Janitrol heater kits for its fleet of DC-3's with deliveries of the equipment scheduled through April.

TEMCO ELECTRONICS & MISSILES CO., Dallas-Grand Prairie, has a new Navy contract for overhaul of an undisclosed number of R4D transports with work scheduled into the fall of 1961.

PAN AMERICAN NAVIGATION SERVICE, 12021 Ventura Blvd., N. Hollywood, Calif., has a new 1961 catalogue illustrating and describing 48 pages of navigation equipment, instruments, books and charts.

SIERRACIN CORPORATION, Burbank, has a new control system for use with Sierracote electrically-heated windshields. It features an internal mercury sensing element for simplicity in design and installation, requiring only two relays in the control system, and the mercury element itself can be replaced readily. By eliminating the complexity of a controller, it saves weight.

HOWARD AERO SERVICE, International Airport, San Antonio, delivered the Barber-Coleman Learstar to Bob Seitz with modifications including new cabin chairs, card tables, cabin carpet, exterior paint and repairs. . . . Doc Copeland brought in Rutherford Oil's Lodestar for heater and other repairs. . . . Pat Golden's Rockwell Manufacturing Convair 340 was in for X-ray of wing and tank work. . . . Also in the hangar for work were Bob Landacre's Celanese Corporation Howard 250, Lynn Carney's Southern Sash Howard 250, D. P. Stephenson's D-18 Beech, Burk Eberts' Natural Gas Pipe Line Aero Commander, Everett Dyer's Republic Steel Super Ventura, Jim Hickerson's Plymouth Oil Learstar, Jack Calquehn's S. J. Groves & Sons Beech Twin, the G. C. Murphy Company's B-26, Henry Messer's Milner Enterprises Super Ventura, Henry Sykes' Bowman Cattle Twin Beech, Milton Keys' Pauley Petroleum Twin Beech, Tom Neyland's E. E. Cockrell, Jr., Super Ventura, and the Pure Oil Twin Beech.

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FUEL INJECTION FOR TWIN BEECH Pratt & Whitney engines is accomplished with this Simmonds SU-580 unit, shown complete with geroter pump. Unit weighs 8.7 lbs. and is 10.5 ins. in height. Conrad International Corp., Lunken Airport, Cincinnati, makes the unit available through its supplemental type certificate (STC) SE1-391 for all D18S, E18S and C45 G & H twin Beech models. The Simmonds unit features automatic mixture control, fuel economy and non-icing freedom. Fuel saving is said to be about $450 per hundred hours.

B. F. GOODRICH AVIATION PRODUCTS has named Clifford G. Zimmerman manager of field sales. He was formerly manager of the division's tires, airlines and distributor sales.

PIEDMONT AVIATION, INC., Smith Reynolds Airport, Winston-Salem, N. C., is refurbishing the cabin interiors of Piedmont Airlines' fleet of 8 Fairchild F-27's and 17 DC-3's. Aisle seats will be upholstered in gold and blue check, while those by the windows will be done in a light and dark blue check fabric. Leather trim will be in sable black. Partitions will feature a metallic gold hexagon pattern on a background of ice blue, with bulkheads covered in a walnut Formica. Carpeting will be in blue and green tweed with window curtains in a gold, black and coral blend.

EONAIR, INC., Shafter Airport, Bakersfield, California, has announced nationwide availability of Eonnex long-life covering materials for all types of fabric-covered aircraft and

control surfaces. Eonnex fabric is a synthetic resembling nylon in appearance, tautened by the application of heat from an inexpensive electric iron.

L. B. SMITH AIRCRAFT CORP., Miami, has ten Lake Central Airline DC-3's for airframe overhaul and electronic standardization, the latter including complete rework and rewiring of the overhead panels. They will also be painted.

READING AVIATION SERVICE, Reading, Pennsylvania, performed wing spar modifications on a TAG Airlines de Havilland Dove. . . . Hoskins Twi-lighter systems were installed on Otto Pobanz's Federated Stores Martin 404 and Hale Geiger's Oneida Paper Aero Commander. . . . Three Army H-21 Vertol helicopters were painted for Arctic operations. . . . B. Q. Van Cott's Koppers Co. DC-3 was in for exchange of control surfaces. . . . Also in for work were Kurt Heilbronn's Philadelphia Evening Bulletin Lodestar, a U. S. Overseas Airlines C-54, Harvey Mahrt's Dana Corp. Aero Commander and Steve Negoescu's Sharmex Corp. Twin-Bonanza.

AIRCRAFT RADIO CORPORATION, Boonton, N. J., has appointed William Lenderman to the staff of its commercial sales department. Before joining ARC, he was chief pilot for the Radio Corporation of America for eight years.

UNITED AIR LINES reported aircraft overhaul operations at its San Francisco maintenance base cost about $44 million in 1960. Nineteen jet airframes were overhauled, along with 141 piston engine airframes, 231 jet engines and 916 piston engines. This represented 7.6 million manhours, according to J. A. Herlihy, senior vice president-engineering and maintenance. UAL had 205 aircraft at year-end, including 14 Boeing 720 and 31 Douglas DC-8 jet airliners, and employs 4,400 workers at the base.

MOHAWK AIRLINES MAINTENANCE DEPARTMENT, Oneida County Airport, Utica, N. Y., had the Laboratory for Electronics Convair 240 in its hangar for a stainless steel nacelle overlay installation and miscellaneous progressive overhaul, resealing of fuel tanks and radio overhaul. . . . Howard Baird brought in his Ken-Air Corporation Convair 240 for fuel system shroud installation. . . . Bob Quinn, maintenance superintendent, brought in Imperial Oil's Convair 240 from Toronto for stainless steel nacelle overlay and other work. . . . Charlie Russell, maintenance superintendent for Sears & Roebuck, was on hand to watch the Sears Convair 440 go through its maintenance. . . . Pilots Pinky Rowe and Bill Drew flew in their Cummins Engine Convair 440 for radio modification and other work.

THE NATIONAL AIR TAXI CONFERENCE reports its members operated 46,059 revenue trips during the 12 months ended Sept. 30, 1960, a 10% increase. Of these, 41,147 were passenger trips, 5,878 cargo trips and 343 ambulance trips. Passengers totalled 81,126, up 17% and included 15,599 passengers carried to the airlines and 12,818 from the airlines. The Conference elected the following officers for 1961: President, Norman Larson, Van Nuys, Calif.; vice presidents, Carl E. M. Hempel, St. Louis, and W. Frank Kelsey, Salt Lake City; and representatives, James Loeb, Red Bank, N. J., and Alfred Bertolet, Reading, Pa.

CONTINENTAL AIRLINES reports it costs less to operate a 600-mph. Boeing 707 jet than a 363-mph. piston-powered DC-7B on a mileage basis. It said the third-quarter, 1960, cost for flying its 707 Golden Jets was 20% less per mile than for its DC-7B's, with direct cost per available seat mile being 43% less in the jets than in the piston-powered transports.

NATIONAL TOUR BY SUPER-V light twin conversion of the Bonanza was made last month by Chuck Banfe, who recently flew the Super-V 21,332 miles around the world in 8½ days. The 200-mph. Super-V, with 170-hp. Lycoming engines, is in production by Bay Aviation Services Co., San Francisco International Airport. While at Columbus, Ohio, on the tour, Banfe was presented with a national achievement trophy from the Touchdown Club there at their all-sports award dinner. Other tour stops and demonstrations were at Albuquerque, Kansas City, Cedar Rapids, Madison, Chicago, Piqua, Hope, Ark., Dallas, Tucson and Phoenix. Banfe is a Pan American World Airways captain. He hopes to fly a Douglas B-26 around the world next fall for a record.

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Super-92 DC3 — Deluxe custom executive, traded in on RW Convair. New interior, fabrics, paint. Recent 8000 OH, RW gear doors, wing tanks. Radome, gyrosyn, dual Collins omni, etc. Special. At Pompano.

Super-92 DC3 — Newly reconstructed, NTSO deluxe executive, RW gear doors, radome, dual Collins omnis, custom panels, luxurious interior with picture windows. In conversion at St. Louis and Toledo. One completed at Pompano.

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DC3 — RW lightweight landing gear doors, Hayes brakes, new paint, new interior, 8 double chairs, 4 single tables, heater, dual hydraulics, dual instruments, etc. $49,500 at St. Louis and Pompano.

DC3 — RW gear doors, Hayes brakes, de-icers, Collins omnis, semi-exec interior, dual panel, dual hydraulics, dual Collins omnis. $39,500 at Pompano.

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680 Aero Commander — 7 place, radome nose dual panel, Sperry H5, Collins 17L8-51X3, A.R.C. 210 VHF, dual A.R.C. omni with Course Director, dual A.R.C. 21 ADF, iso-amp. At Pompano.

520 Aero Commander — Collins 51R3 omni, de-icers, 5 seats, 5700 gross. At Pompano. $22,885.

Grumman Goose — Deluxe executive interior. Hartzell props, metal wings, Omni, VHF, ADF, LF, etc. Low total time, low time SOH engines and conversion. At Pompano.

Apache — Dual omni, ADF, ILS, Grimes, etc. $13,885 at Pompano.

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Custom 18 Twin Beech — Beautiful airplane with new ship guarantee at less than a third of factory new price. NTSO airframe, engines, with all AD Notes. Deluxe Custom 18 interior, with air stair, large picture windows, enlarged cabin. Collins omni, gyrosyn compass, A.R.C. 210, electric T&B, many extras. See at Pompano.

D18S Twin Beech — 1950, NTSO engine, hydromatic props, 80 gal. nose tank, cabin radio, dual omni, de-icers, excellent interior. At St. Louis. $27,885.

D18S Twin Beech — 1953 hydromatic. Collins 17L8-51X3, dual omni, new interior with 3 seats and couch, cabin instruments and speaker, 80 gal. nose tank. Traded on DC3. At Pompano. $27,885.

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B50 Twin Bonanza — Dual A.R.C. omni with Course Director, dual VHF, ADF. Clean, bargain at $22,885, in St. Louis.

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